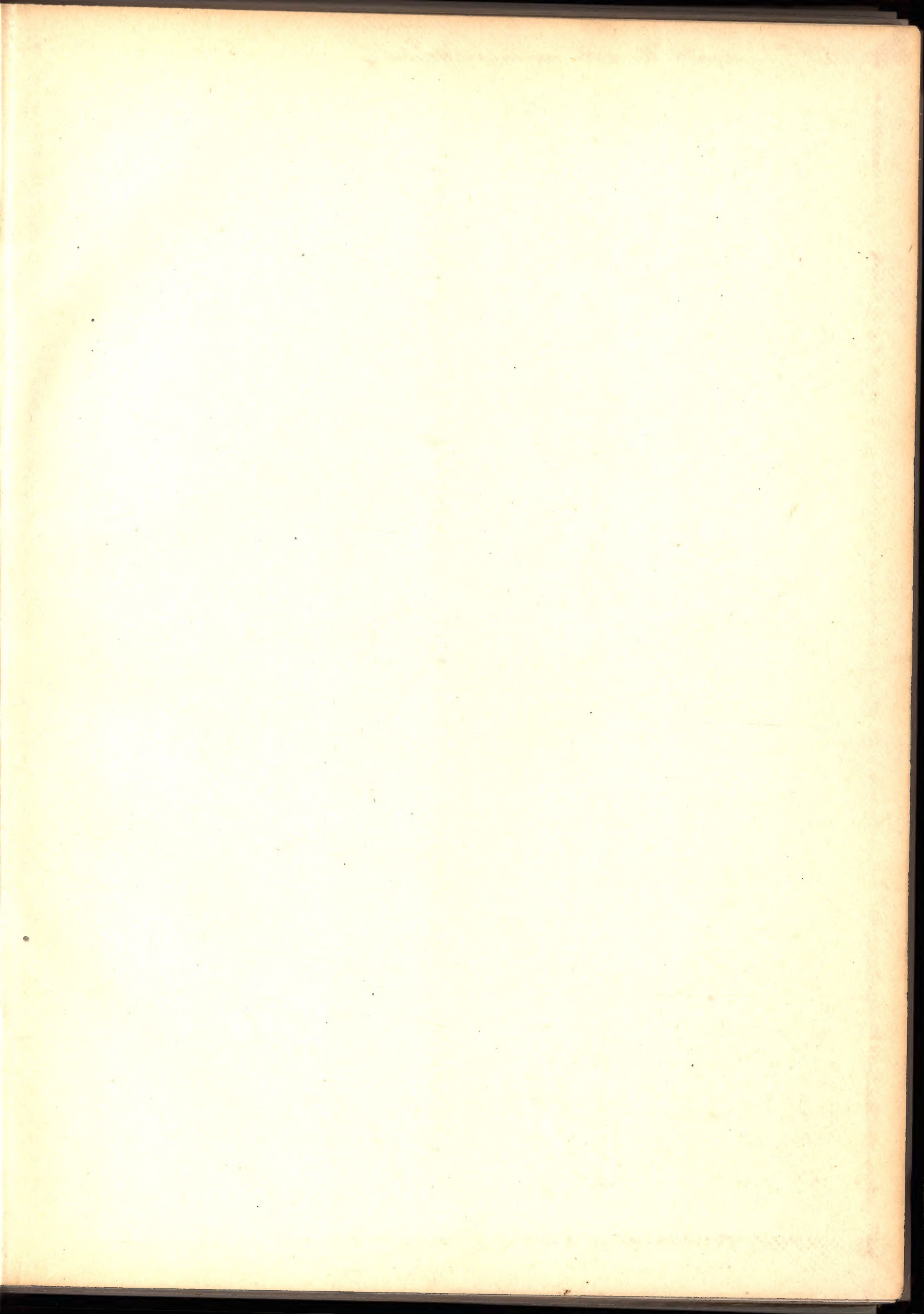
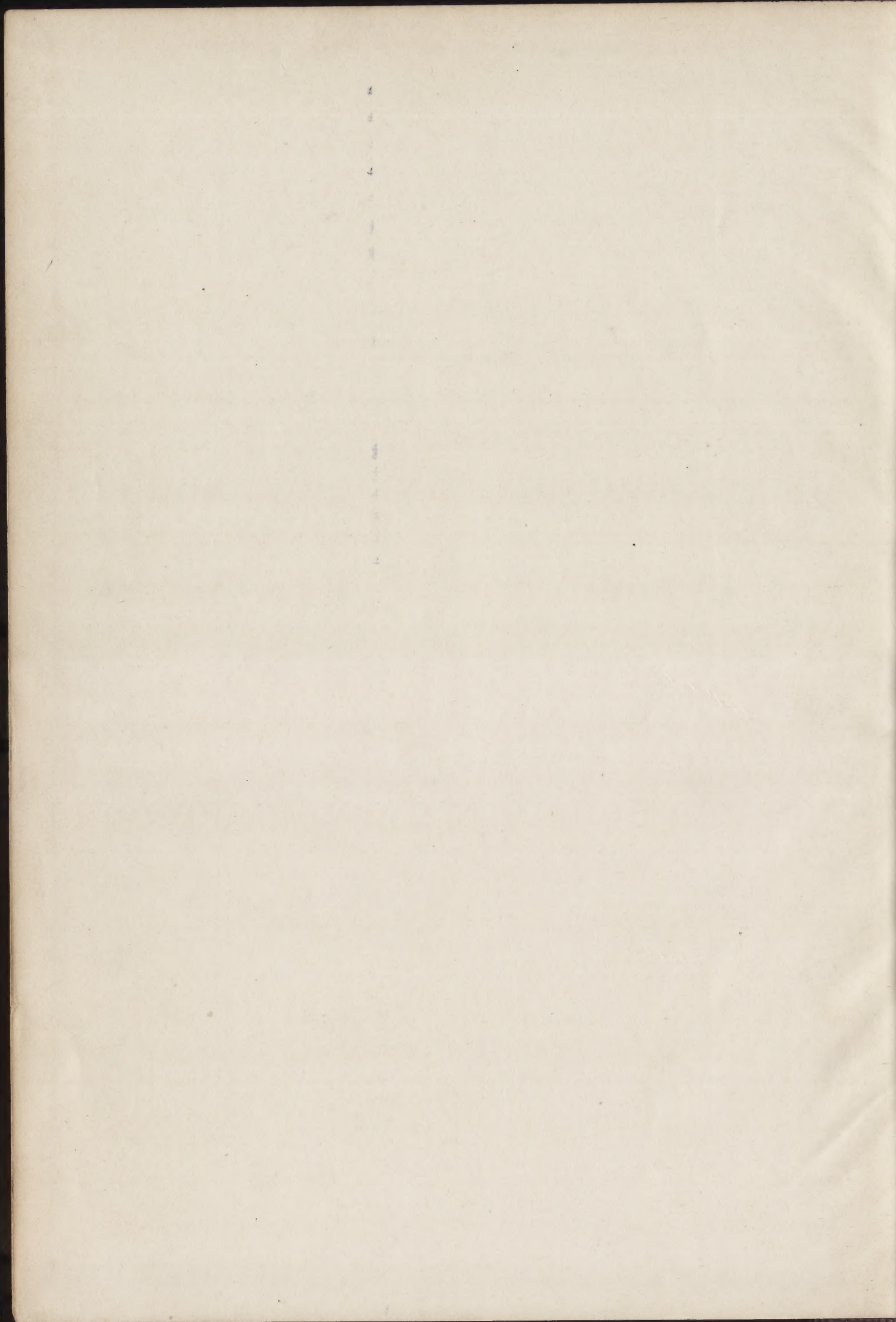
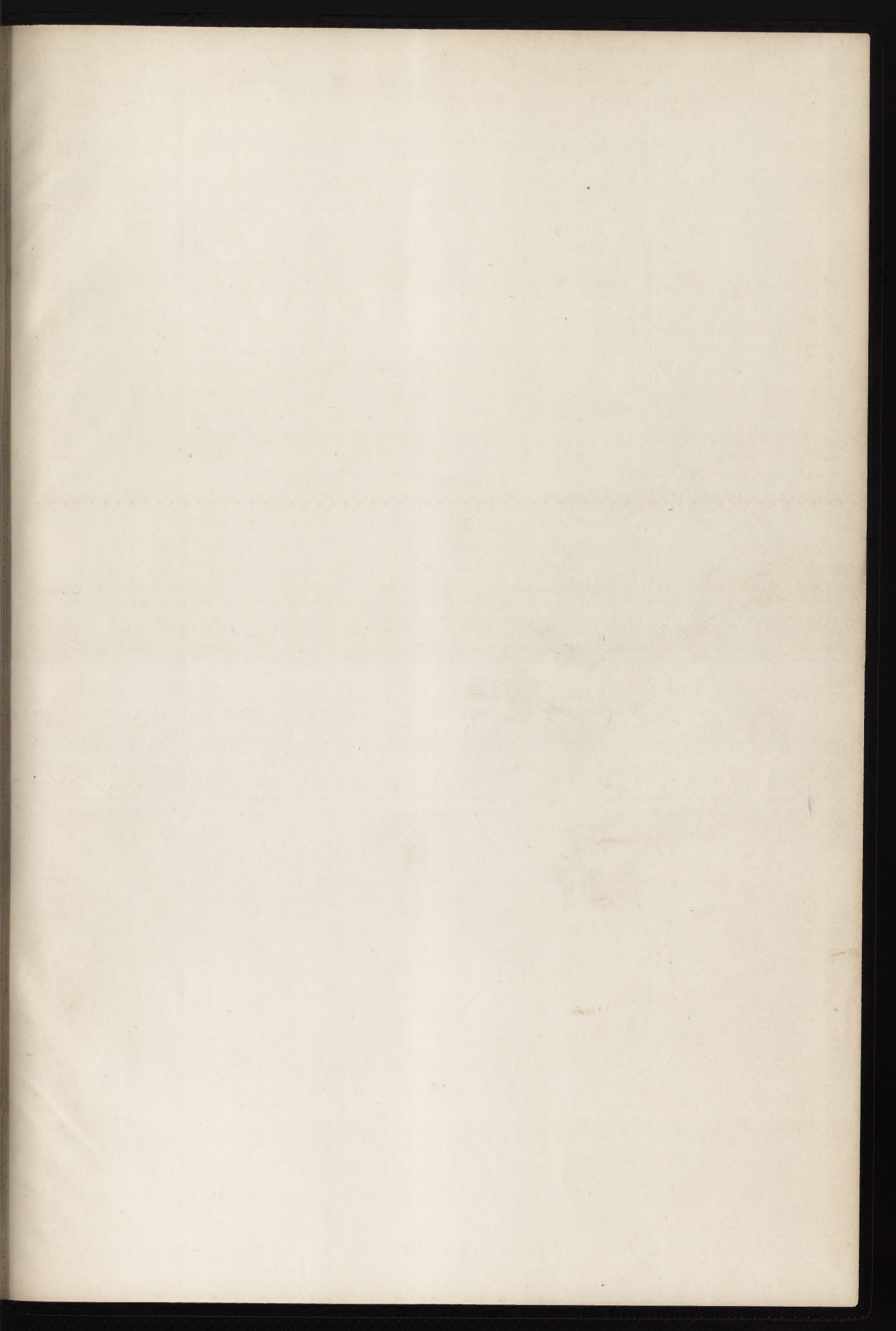
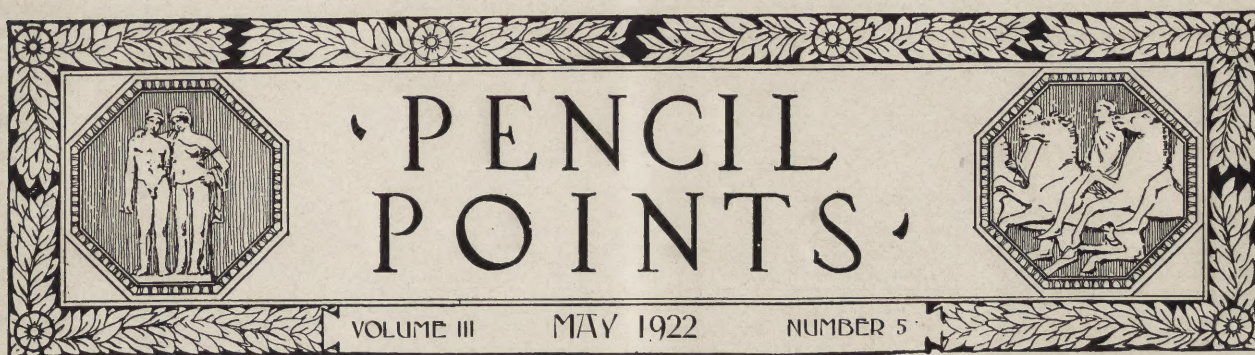


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PENCIL POINTS AS A TWO-YEAR-OLD

WE DO NOT intend to follow the precedent established by many well known department stores and hold a celebration every time we have a birthday, but we find it impossible to let this, our second anniversary, pass without a word to our charter subscribers and our other readers who have backed us with their subscriptions and made possible PENCIL POINTS as it is today.

Just two years ago we sent out our preliminary notice announcing the forthcoming publication of PENCIL POINTS as a journal for the drafting room. Over three thousand one hundred architects and draftsmen responded to the first call. We knew right then that this journal had a distinct field and would grow and prosper, provided we kept faith and delivered the goods. Probably no new publication was ever started at a worse time in relation to the business conditions prevailing with those from whom its support must come. Most architects' offices were little more than skeletons of what they had been, with hardly a job in sight. As a consequence many excellent draftsmen were out of work, but in spite of this the army of Pencil Pointers has continued to grow, so that now, just two years after we chucked the good old hat into the ring, we number well over nine thousand, and the ranks are being added to every single business day of the year.

Architects, draftsmen and specification writers and students in the architectural schools have found this journal suited to their needs and have subscribed in large numbers for the paper. We are greatly pleased that we have been able, with the help of those men who have contributed so generously of their material, to publish a paper which has found its way to the affections of a large number of practising architects, many of the important men employed by architects, and also a substantial group of advanced architectural students.

The support we have received has imposed upon us an obligation which we fully realize and which we are determined to discharge to the very best of our ability. In carrying our work still further we want and frankly ask the co-operation of our present body of readers in two entirely different, but equally important respects. First, we are extremely desirous at this time, when the entire building industry is experiencing a healthy and unmistakable

revival, to extend the influence of our paper by doubling our number of readers, as recently laid before you in letter form. There are still architects who have not sent in their subscriptions and there are still draftsmen and architectural students who either are not readers of PENCIL POINTS or who buy it through newsdealers or depend upon glancing over the copies of their friends. Every one of these men should get the paper every month, because only in this way can they be sure of complete files, which will mean so much in the busy months and years to come. We are constantly in receipt of orders for back copies of the first and second volumes which we are entirely unable to supply, and we have even been unable to secure some of the early issues by offering five times the original subscription price for them. We hope that every reader will take the time and make the effort necessary to *bring one new subscriber* to us.

The second form in which we want co-operation is entirely different. We want criticism, and we want suggestions direct from the men on the firing line. What would you like to see treated in PENCIL POINTS that has not yet been presented? What particular problems are confronting you and your acquaintances which could be discussed to advantage in this journal? Frequently a publisher asks for suggestions more or less as a matter of form and hopes to goodness he won't get any. We want a lot of them and we want them from all parts of the country, and from representatives of the different groups making up the total PENCIL POINTS family. While we as publishers may be likened to a broadcasting station, we want you to know that we also have a receiving apparatus here and we trust that you will give us many occasions to use it.

In our editorial next month we will discuss in detail certain editorial developments and additions which will go into effect with the June number, and in connection with our editorial plans for the balance of this year and for next year we want as many carefully-thought-out suggestions as we can possibly get. We told you at the start that we purposed publishing PENCIL POINTS *with* our readers rather than *for* them. Any success we may have had in pleasing our readers we attribute very largely to the co-operation we have had from you men at the other end of the line.

PENCIL POINTS



Hall in House for F. S. McIlhenny, Esq., at Chestnut Hills, Pa. Mellor, Meigs & Howe, Architects. (See text on the opposite page.)

ARCHITECTURAL DETAIL PART XIII

BY JOHN VREDENBURGH VAN PELT

This is the thirteenth instalment of an article in which Mr. John Vredenburgh Van Pelt, formerly Professor in Charge of the College of Architecture, Cornell University, Architecte Diplômé par le Gouvernement Français, and author of "Essentials of Composition," will discuss the designing of good architectural detail and point out the means by which the ability to produce good detail can be developed. Reproductions of detail drawings from some of the best architectural offices will accompany this article and the publication of this series of drawings will be continued after this discussion of the subject has been completed—making a valuable feature of this journal indefinitely.

A FRIEND asked me recently, "What is the difference between pottery and faience?"

He might as well have added enamelled terra cotta to the list. I did so in passing the question on to divers manufacturers and experts and finally to one of the professors at an important university that has a whole department devoted to the study of the art. After receiving a somewhat non-committal answer from the last gentleman, I said, "Well, then, which term ought one to use for all of these beautiful objects?" "If you are talking to the trade," he answered, "you call it 'Ceramics,' but if you are addressing an amateur, you weigh heavily on 'Keramics'."

Truth to tell there is really no very good dividing line between pottery and faience except that the former derives its name from pots and the latter seems to suggest plaques and tile.

Differences in the clays are really matters of convenience or whim in manufacture. There are two general distinctions termed "white body" and "red body," but each plant uses its own mixture and many plants make both white and red tile, the white being usually somewhat softer than the red. The effect of the body on the appearance of the finished tile is only noticeable in the thinner and more transparent enamels or, of course, in the partially glazed tile.

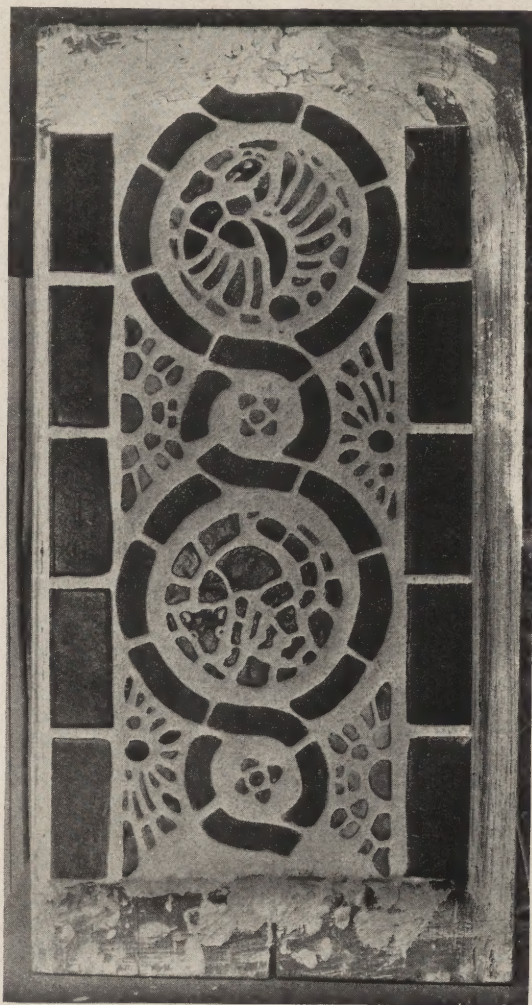
As architects and decorators we have less to do with pottery *per se*, although urns and vases may play an important part in a composition and unquestionably do in furnishing. The hand painting of this more intimate work may run from miniature to the broadest kind of free design. In pottery, faience or terra cotta, the modelled body is so often associated with the colored design that it seems hardly worth

while, in a curtailed review, to try to study it separately. Perhaps no other comment is needed than the reminder that a background should be less brilliant in color and perhaps darker in value than a motif. The Della Robbias reserved their bright yellows or whites for the subjects of their plaques. Many of the old Persian tiles were painted on a flat surface, but examination of the illustration of the faience decoration Medresse-I-Chan, at Shiraz, Plate XVIII of this issue, and of the exterior of a portion of the Mosque at Safi at Ardebil, Plate XIX, will reveal intricate examples of both painted and modelled patterns on the same individual tile. The detail of the Blue Mosque shown on Plate XIV of the April PENCIL POINTS was tile mosaic.

There is a certain quality of broad decorative modern vase painting made at some of the English pottery works that would be most appropriate for wall tile decoration. It seems a pity that it is not imitated by our American tile manufacturers. Perhaps one objection may be that painted designs are not so readily fired at high temperatures and are, therefore, not as good for exterior work. But exterior work has to carry to a distance and is usually large enough in scale to be made up of small tile, a variety of mosaic. At any rate, the different colors may be separated by incisions or little ditches to keep them from flowing into each other while molten.

This firing of tile is perhaps the best distinction between pottery, faience and enamelled terra cotta. Decorated china, hand-painted plates, etc., are often painted on the underlying white glaze and fired at low temperature in a small decorator's oven.

The next group, pottery and faience, are fired in kilns at a higher temperature, the body first, usua-



Contrasting Textures Obtained by Setting Tile in a Background of Cement.

PENCIL POINTS

ally, the enamel separately afterward. They are enclosed in a coverless terra cotta box called a saggar, each successive box forming the lid of the one below it in the kiln. Where the tile, which have been moulded or cut out like cookies and dried out, are not to be enamelled, the saggars have small openings cut down an inch or less into the sides to allow the gases of the kiln to enter and produce the beautiful accidental fire flashings that are so much prized for certain work.

Terra cotta is burned in kilns with double walls so that the inside of the kiln is really a big saggar. It is fired at a still higher temperature, 2250 degrees, as structural strength is needed.

Different layers of slip or enamel are usually put upon the dried clay and all fired with the body in one operation. For enamelled terra cotta a material or slip that will close the pores is sprayed on and then one or two successive glazing materials are applied, one perhaps a flux and the other the real enamel color. All enamel contains a mixture called the "Base" which is the element that holds the color and forms the adhesive glaze. It must be of such a nature that it will unite with the body, else it will craze and perhaps crack off. The other distinctive parts of the enamel are the mineral that gives the color and a flux. Of course in many enamels the distinctive color may be a result of the influence of the color mineral on a particular base, and then the base has to be varied. For certain effects a tile is fired at a high temperature. Then a second glaze is painted upon certain portions and it is refired at a lower temperature that does not affect the first color. This may even be repeated a third time at a still lower temperature.

A more usual process in blending colors is to place a layer of one color on the tile and when this is dry,

dip it in another color or paint, or dab the other color on pre-determined parts. When the enamels melt they mix together and produce very beautiful, more or less accidental, effects. If the heat is sufficient, they boil and bubble up together and when they have cooled there may result points where the under color has taken precedence of the upper. Usually the upper color predominates and the under color softens or tones it. Furthermore, some colors in drying will crackle or draw apart and may introduce an interesting texture contrast. See the panels on this page.

The designer of colored faience or terra cotta decoration must bear in mind that accidental colors are the rule. Even the intensity of a plain color is more or less uncertain. Of course before it is fired, no color gives any suggestion of the final appearance. In one factory that I visited lately, all the enamels were made up with a red lead flux, and the tiles, set out to dry before firing, had a thick coating on the top, no more beautiful than a piece of structural iron just come from the shop.

Past experience in the use of colored faience on the exteriors of buildings makes me feel that small tiles, forming a mosaic, are safer than large tile of a single color, even though the decoration is to be seen at a great distance. To illustrate: If a blue band, four inches wide, is required, it would be better to build it up of smaller triangular tile of slightly varying shades of blue than to set in four inch by four inch tile side by side, this despite variation of shade on each of the four inch tile.

I realize the process can be carried to excess and at times one may feel the need of a space filled by a simple, more even color, but the usual fault is in the direction of too great smoothness and too little

(Continued on page 37)



Tiles That Show an Interesting Crackle Texture.



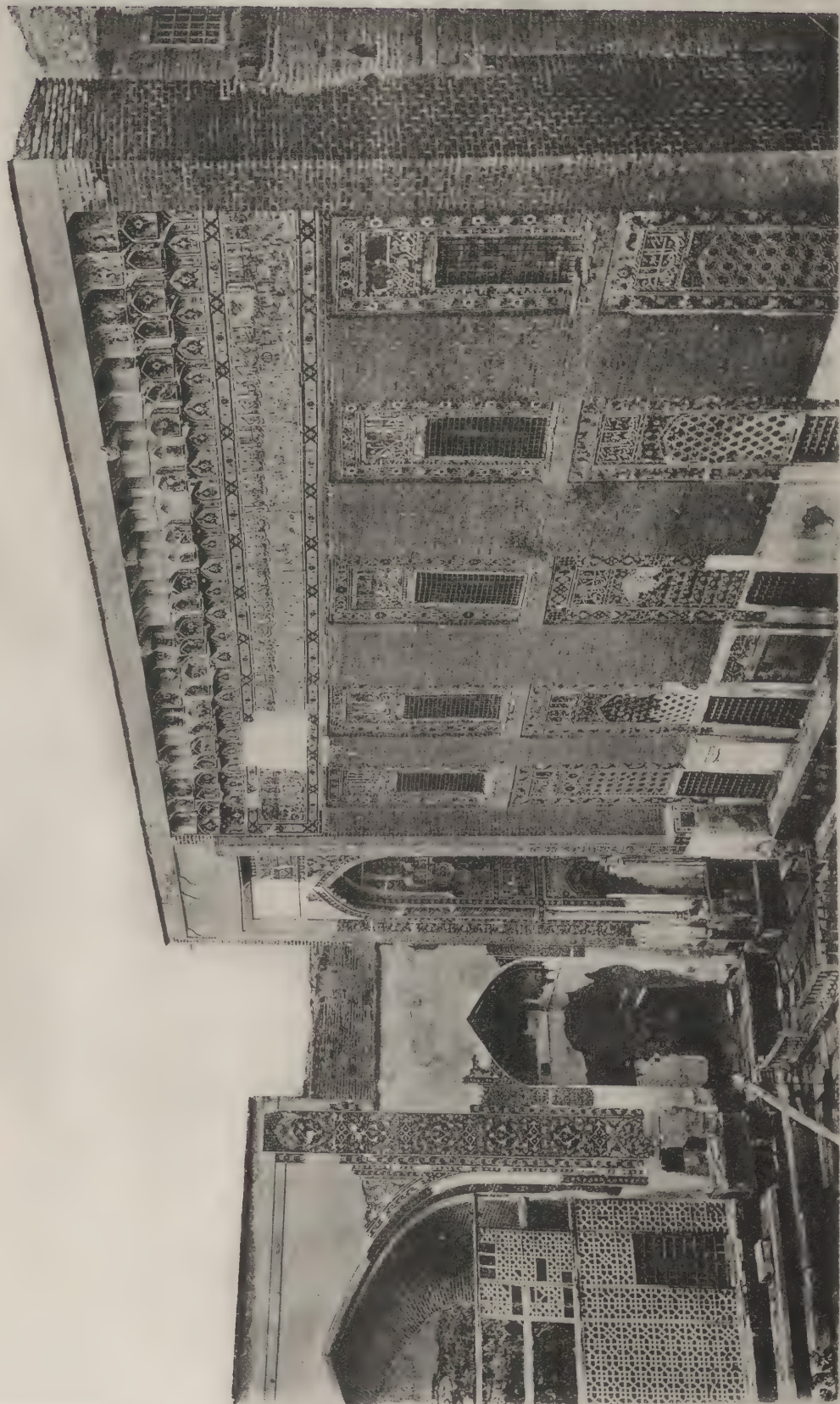
DETAIL OF PORTICO OF OCTAVIUS, ROME.
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

The details of the portico of Octavius at Rome, reproduced on the other side of this sheet from a restoration by E. Paulin, are among the most virile of the many, well-chosen details of Roman architecture included by H. D'Espouy in his "Fragments d'Architecture Antique." This sheet is also an example of masterly rendering.



FAIENCE DETAIL, MEDRESSE-I-CHAN AT SHIRAZ.
FROM SARRE'S "DENKMAELER PERSISCHER BAUKUNST."

The detail of faience decoration from the main entrance of the Medresse-i-ghan at Shiraz shown in the plate reproduced on the opposite side of this sheet is typical of the finer faience work of Persia. The skill of the designer in making a well distributed pattern of forms that are conventionalized, with an appreciation of the character of the material, and made to express the spirit of the people and the times while conveying the essential characteristics of the natural objects from which these ornamental forms were derived, commands admiration and affords a wealth of suggestions to designers in modern faience.



PORTION OF THE MOSQUE OF SAFI AT ARDEBIL.
FROM SARRE'S "DENKMAELER PERSISCHER BAUKUNST."

The façade of the prayer room of the Mosque of Safi at Ardebil shown in the plate reproduced on the opposite side of this sheet is a most interesting example of the combination of faience with brick work, the former used as an enrichment, for which the simple brick surface provides an excellent foil.



Courtesy of Arthur H. Harlow & Co.

PENCIL SKETCH, SEGOVIA
BY ANDRE SMITH

The sketch by André Smith reproduced on the other side of this sheet is notable for the direct method of drawing and the production of a wide range of values by skillful use of a very delicate line. The freshness of the drawing is due to the artist's habit of working rapidly and making a drawing at a single sitting.

PERSPECTIVE DRAWING, PART XXIII

BY PAUL VALENTI

In this series of articles Mr. Valenti is taking the student step by step through a course in the direct construction or perspective plan method. Mr. Valenti, who is Instructor in Architecture at Washington University, St. Louis, Mo., is a graduate of The Royal Academy of Fine Arts of Brera, Milan, Italy, where he received the degree of Professor of Architecture. Mr. Valenti studied under Professor Ferrario, principal of the school of perspective at the Academy and scenographer at "La Scala," theater in Milan, and under other distinguished masters. Upon the investigations and the ripe practical experience of these men, he has based the course which he is presenting to the readers of this magazine. The method shown here, once it has been mastered, saves time and gives increased accuracy over the usual practice in laying out architectural perspectives instrumentally.—Ed.

PROCEEDING, we observe in plan, Figures 52A and 53 (See March issue for all figures referred to), that the side wings extend to the left and to the right of the central unit 28'-6" and line with the centre of the tower (or centre unit) plus the cornice projections and are 43'-0" deep; also that these wings are *not* as high as the central unit or tower but reach only to within 5'-0" of the top of the tower. Consequently, first noticing in plan Figure 53, that the distance of these wings from the transparent plane is 18'-6", measure off this distance to the left of point *A* on the geometric line *RS* to point *n*. Then conduct a straight line from this point to measuring point *MI* on the Horizon Line, intersecting a line conducted from point *A* to vanishing point *VPI*. From this intersection *f* conduct a straight line to vanishing point *VPII* and where it intersects line *a'VPI* (which is the left-hand side of the upper limit of the tower) at point *e*, lower a perpendicular to the ground plane. Conducting a straight line from point *a'''* to vanishing point *VPI*, you will intersect this perpendicular at point *e''* which represents the lower point of the left-hand wing of the building 18'-6" away from the left-hand corner of the building and emerging exactly from the centre of the tower, plus the cornice projection, as shown in the plan at Figure 53. Lowering a perpendicular from point *f* until it intersects a straight line conducted from point *C* to vanishing point *VPI* at point *M*, we will have found the extreme left-hand lower limit of the left wing, and measuring up 35'-0" on line *AC* to point *g* representing the height of the wings (as indicated in the elevation in Figure 52B), and conducting a straight line from this point *g* on line *AC* to vanishing point *VPI* it will intersect line *fM* at point *g'* representing the exact height of 35'-0" or *g'M* on line *fM* 18'-6" away from the transparent plane, as indicated in the plan at Figure 53, and represents the extreme left-hand corner of the left wing of the building. Again by measuring off 84'-0" to the right of point *A* on the geometric line *RS* to point *m*, representing the total length of the entire building shown in the plan at Figure 52A, conduct from this point *m* a straight line to measuring point *MII* on the Horizon Line, until it intersects line *AZ*, at point *m'* which intersection will represent in perspective, from point *A* this given distance of 84'-0" as given in *Am* on the geometric line *RS*, or, in other words, *Am* (in the geometric) = *Am'* in perspective. This line *Am'* as was shown previously, represents the upper front limit of the solid containing the building. Now upon observation we will notice that the wings of the building are 18'-6" back from the transparent plane, consequently having

already found this depth at point *n* to the left of point *A* on line *RS*, and also having found point *f* at the intersection of this measuring line and line *AVPI* (*An* in the geometric = *Af* in perspective); having also found point *g'* on line *fM* (*Ag* in the geometric = *f'g'* in perspective), we may now proceed to find *g''* which represents the upper extreme right-hand limit of the building. Conducting a straight line from point *m'* to vanishing point *VPI* and intersecting this line by another straight line conducted from point *f* to vanishing point *VPII* we will find *f''*. We may prove also the following: *Af = m'f''* which in turn equals *An*, the latter being in the geometric. Conducting a straight line from point *g'* (already found on line *fM*) to vanishing point *VPII* it will intersect a vertical lowered from point *f''* at point *g''* thus determining the extreme right-hand limit of the building in *g'g''*. Lowering a perpendicular from point *f''* indefinitely and conducting a straight line from point *m''* (which is the intersection of a vertical lowered from point *m'* and line *CVPII*) to vanishing point *VPI*, it will intersect this perpendicular at point *g''* thus determining the lower right-hand limit of the right wing of the building. Uniting point *g'g''* and *Mg'''*, and closing with the lines *e'e''* and *g'g'''* with what we already have, we will obtain the front elevation of the building in perspective. Now for the depths. From point *A* on the geometric line *RS* measure off in the scale of the picture 33'-6" to the left representing the depth of the tower as indicated in Figure 52A and Figure 53, (measure the full depth or distance from the front face of the steps to the back wall of the tower) and place this distance to the left of point *A* at point *p*. From this point *p*, using measuring point *MI* on the Horizon Line, conduct a straight line intersecting line *AVPI* at point *p'*, thence a line to vanishing point *VPII* intersecting line *a'VPI* at point *p''* which determines the depth of the tower in perspective. To prove: *Ap*—on the geometric line *RS* equals 33'-6" indicated in the plan at Figures 53 and 52A. Therefore, *Ap* in the geometric equals *Ap'* in the perspective and also equals *ap''*.

The same is done to obtain the depth of the wings. For example: measure off the total distance from the transparent plane in Figure 53 to the rear left-hand corner of the building which, it will be observed, is 61'-6". Then place this distance, in the scale of the picture, to the left of point *A* on the geometric line *RS* at point *t*. Using once more the measuring point for this side, which is *MI* on the Horizon Line, conduct a straight line from point *t* to point *MI* intersecting line *AVPI*

(Continued on page 34)

PENCIL POINTS



Figure 155. St. Peter's, Rome.



Figure 156. Chamber of Deputies, Paris.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE
OF DESIGN

CLASS B. PLAN PROBLEM. PART VIII.

Size, Scale and Proportion—(Concluded)

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive.—ED.

IN THE two previous numbers we have studied the sizes of various architectural motives; we have seen how they vary, both in size and in proportion, within certain limits. To complete this study, let us look at two façades in their entirety—that of the Pierpont Morgan Library in New York, Figure 151, and that of the Butler Art Gallery, at Youngstown, Ohio, Figure 152. They are of the same length, 120 feet, and are here reproduced at the same scale: they are particularly interesting as being so nearly the type and the size of an average Class "B" plan problem. Each façade is of the three-motive type, and in each the central motive is sub-divided into three; in each case the central motive is a loggia, and in each a niche forms the principal feature of the end motive. The arches of the Butler Art Gallery are fifteen feet from centre to centre of column; the central arch of the Morgan Library is, as we have seen, slightly less, fourteen feet from centre to centre of column. These are particularly good examples to study for their scale and proportion, which are excellent, and also for the careful use of detail, of profile of mouldings, and of the placing of ornament where it will be set off by contrasting surfaces of blank wall. As is usual, the line drawings hardly do justice to these carefully studied buildings, which depend for their effect on proportion, on beauty of execution, and the judicious placing of a small amount of ornamentation, rather than on a profusion of ornament and a complication of lines. The photograph of the Butler Art Gallery as completed, Figure 153, will show how beauty in

good proportions is brought out in executed work. The Morgan Library is so well known as to need no further illustration.

We need give no other examples. The value to the student will be in his making such a study of size and scale and proportion himself, devoting an evening to this purpose during the early stages of each problem.

In speaking of proportion so far we have used only terms of façade; however, all study of proportions is regulated by those of interiors. The natural order of study, for any program, is to make first a tentative disposition of the rooms and spaces required—that is the plan. Then must be determined the necessary heights of stories, of windows, of roofs—that is the section. In reality the *plan is only a horizontal section, the section a vertical plan, and these two have as their resultant, a façade.* The first study of façade will, of course, cause modifications here and there in plan and section; each of these studies—plan, section, elevation—is the complement of the others; they cannot be treated as successive phases of study.

The usual error is to make motives too small in scale—to crowd too many into a few feet. It is

also a mistake to go to the opposite extreme; extravagant proportions do not give grandeur in composition. This grandeur of aspect is obtained partly by simplicity and unity, but also by the number of elements—a long façade should have a greater number of "bays" than a short one. Thus the façade of the Palace of Versailles fronting on the park, Figure 154, is

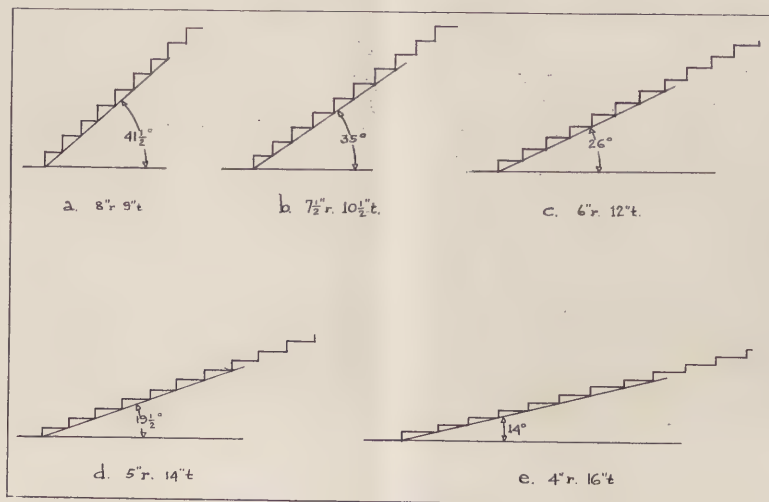


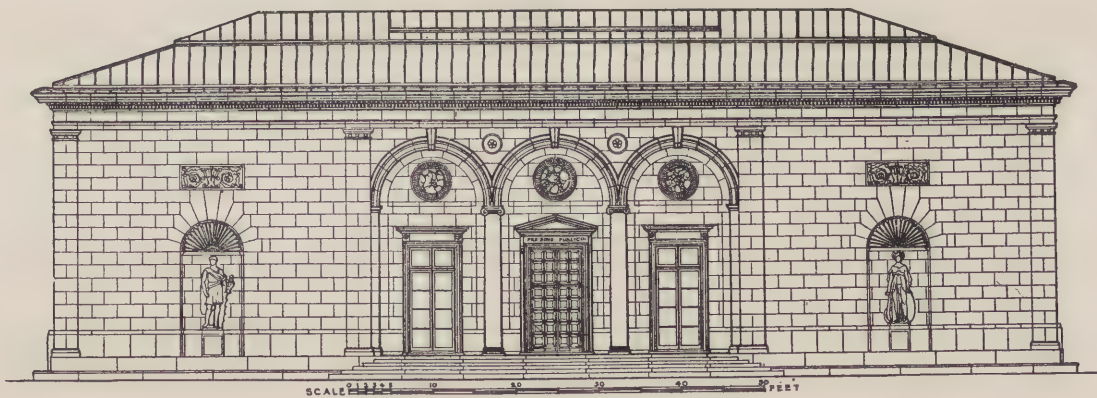
Figure 157. Sections of Stairs.

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Copyright by Paul Wenzel and Maurice Krakow.

Figure 151.



Copyright by Paul Wenzel and Maurice Krakow.

Figure 152.

Figure 151, Façade of The Morgan Library, New York, and Figure 152, Façade of The Butler Art Gallery, Youngstown, Ohio, are Reproduced at Reduced Size from the "Monograph of the Work of McKim, Mead & White," by Permission of the Publishers, The Architectural Book Publishing Co., New York City.

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Figure 154. *Palace of Versailles. General View of Front on the Gardens. From Paul Favier's "L'Architecture et l'Décoration aux Palais de Versailles et des Trianons."*

very simple in composition and grand in aspect, but notice how many bays are contained in the projecting central portion—23 bays in 330 feet. The effect of grandeur is here produced by the multiplicity of motives—and these motives are large, quite large. If the number of bays had been reduced to a few there would not have been the same effect of grandeur, even though the total façade had remained the same in size.

It is well to remember in this connection that while some architectural elements may vary greatly in size—that a column may be six or sixty feet high, an arch five or a hundred feet wide—there are other elements that are fairly constant, because they are related to human uses. Thus a balustrade is usually from three to four feet high. The portico of the church of St. Peter at Rome, Figure 155, has a
(Continued on page 34)



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Figure 153. *Photographic View of the Front of the Butler Art Gallery, Youngstown, Ohio. Reproduced at Reduced Size from the "Monograph of the Work of McKim, Mead & White," by Permission of the Publishers, The Architectural Book-Publishing Co., New York City.*

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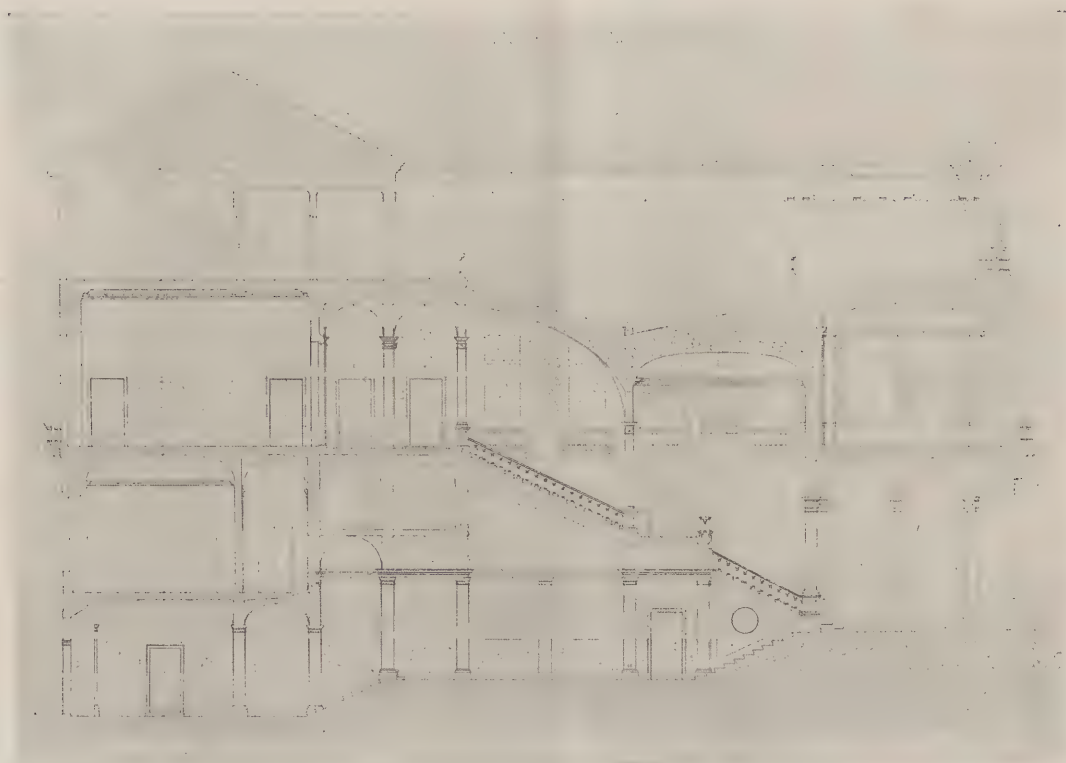


Figure 158. Section, Palazzo Balbi, Genoa. From Reinhardt's
"Palast Architektur Italiens, Genua."

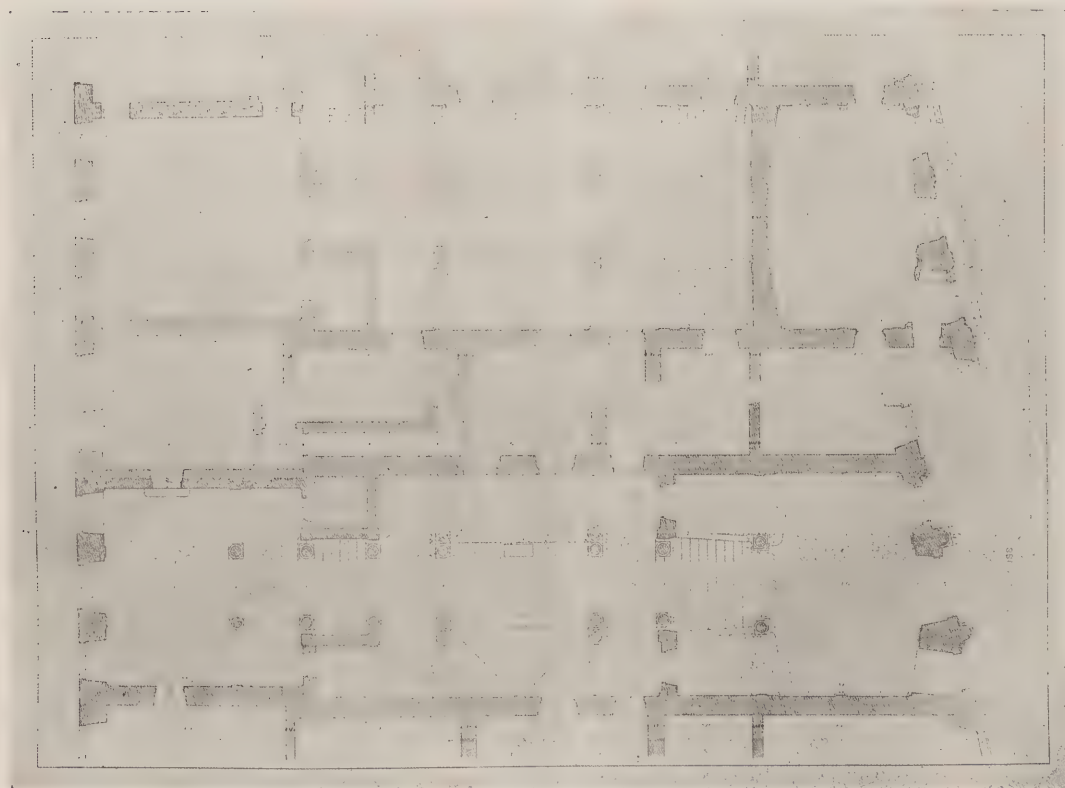


Figure 159. Ground Floor Plan, Palazzo Balbi, Genoa. From Reinhardt's
"Palast Architektur Italiens, Genua."

A VOCABULARY OF ATELIER FRENCH. PART II

BY RAYMOND M. HOOD

This is the second installment of a vocabulary which Mr. Hood, Architecte Diplômé par le Gouvernement Français and Chairman of the Committee on Architecture of The Beaux-Arts Institute of Design, is preparing especially for this journal. It will be of special value to students in the ateliers in this country as well as to those who may later study at the Ecole des Beaux Arts in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier. As it is believed that an attempt to indicate the pronunciation would be futile, no such attempt is being made here; the pronunciation should be learned from someone who speaks French correctly.—Ed.

C

- Caboche: *n. f.*; (*slang*) head.
 Cabot: *n. m.*; (*slang*) dog.
 Calicot: *n. m.*; calico; (*slang*) a ribbon clerk.
 Calque: *n. m.*; *arch.*, tracing paper.
 Calquer: *v.*; to make a tracing or copy.
 Camelot: *n. m.*; a peddler.
 Camelote: *n. f.*; an inferior merchandise; work that is badly done.
 Camouflage: *n. f.*; the art of disguising.
 Camoufler: *v.*; to disguise.
 Canaille: *n. f.*; rabble.
 Canard: *n. m.*; a duck; also, false news, a lie.
 Carton-pierre: *n. m.*; paper-maché.
 Cartouche: *n. m.*; an ornamental medallion; *n. f.*; a cartridge.
 Cerner: *v.*; to surround, to silhouette (as in a drawing).
 Chahut: *n. m.*; a racket, a scandal.
 Chahuter: *v.*; to upset, to throw in disorder, to make a racket.
 Chameau: *n. m.*; a camel; (*slang*) a bull, an error, a mistake.
 Changement: *n. m.*; a change; *changement d'esquisse*, change from sketch.
 Chapiteau: *n. m.*; the capital of a column.
 Char: *n. m.*; a wagon, a car; also a float (as in a cortege or parade).
 Charrette: *n. f.*; a cart; *en charette* (*slang; arch.*) the final drive to complete a projet.
 Châssis: *n. m.*; a wooden or iron frame; *arch.*: frame on which a drawing or painting is to be stretched.
 Chateau: *n. m.*; a castle, also a palatial country residence; *chateau d'eau*, the architectural front of a reservoir of water.
 Chef-cochur: *n. m.*; *arch.*, the student in charge of the nouveaux in an atelier.
 Chevalet: *n. m.*; an easel.
 Chic: *n. m.*; style; also used in the ateliers to mean, manual dexterity, or clever technique.
 Chicane: *n. f.*; trickery.
 Chichi: *n. m.*; (a) pretensions, airs; (b) *arch.*, ornamentation.
 Chiper: *v.*; (*slang*) to steal.
 Choeur: *n. m.*; choir; *arch.*, choir of a church.
 Chouette: *n. f.*; (a) an owl; (b) *adj.*; (*slang*) bully, fine.
 Chute: *n. f.*; the action of falling; *arch.*, ornament disposed vertically in the form of a drop, as the "chute" of the Louis XIV style.
 Clef: *n. f.*; (a) key; (b) *arch.*, keystone of an arch.
 Ciment: *n. m.*; cement; *ciment armé*, or *beton armé*, reinforced concrete.

- Cocasse: *adj.*; (a) pleasant; (b) ridiculous.
 Cochon: *n. m.*; pig; *adj.*; (*slang*) dirty, indecent, smutty; *chef-cochon*, the student in charge of the nouveaux in an atelier.
 Cocotte: *n. f.*; a sort of iron pot for cooking; (*slang*) a demi-mondaine.
 Collage: *n. m.*; sticking, mounting.
 Colonne: *n. f.*; column.
 Comble: *n. m.*; (a) ridge; (b) roof space.
 Compas: *n. m.*; a pair of compasses.
 Concierge: *n. m.*; and *f.*; the porter or guardian of a building.
 Concours: *n. m.*; competition; *hors-de-concours*, *adj.*; ineligible to competition.
 Contre-coller: *v.*; to float a drawing; *literally*, to stick against.
 Coquard: *n. m.*; an old rooster; (*slang*) a pretentious and ridiculous old fellow.
 Corvée: *n. f.*; a difficult and thankless task.
 Cossu: *adj.*; rich, well-to-do.
 Costand: *adj.*; strong, powerful.
 Couche: *n. f.*; (a) a bed; (b) a layer; *avoir une couche*; to be crazy or eccentric.
 Couleur: *n. f.*; color.
 Couloir: *n. m.*; corridor, passage.
 Coupe: *n. f.*; (a) a cup; (b) the action of cutting; (c) *arch.*, a section.
 Coupole: *n. f.*; cupola.
 Cour: *n. f.*; court.
 Cours: *n. m.*; course of study.
 Crasse: *n. f.*; greasy dirt.
 Crayon: *n. m.*; pencil.
 Critique: *n. m.*; a criticism.
 Croquis: *n. m.*; a sketch.
 Culot: *n. m.*; (a) the husk in architectural ornament from which grow *rinceaux* and *volute*s; (b) (*slang*) nerve, crust.

D

- Dallage: *n. m.*; a floor or pavement of marble, stone or tile.
 Debarbouiller: *v.*; to wash the face.
 Dèche: *n. f.*; (*slang*) misery, want.
 Degagement: *n. m.*; *arch.*, circulation or corridors of a building.
 Dégotter: *v.*; (*slang*) to dig out, to find.
 Dégoutant: *adj.*; disgusting.
 Dégouter: *v.*; to disgust.
 Denticule: *n. m.*; *arch.*, dentil.
 Dessin: *n. m.*; drawing.
 Dessiner: *v.*; to draw.
 Détraqué: *n.* and *adj.*; deranged, crazy.

(To Be Continued)

PENCIL POINTS



*Photograph of a Model for a Proposed Church Building.
Scale of Model One-eighth Inch Equals One Foot.
Helmle & Corbett, Architects.*



Photograph of a Portion of Model for The George Washington Masonic National Memorial, Alexandria, Va. Scale of Model, One Thirty-second of an Inch Equals One Foot. Helmle & Corbett, Architects.

ARCHITECTURAL MODELS OF CARDBOARD, PART II

BY HARVEY W. CORBETT

This is the second installment of an article in which Mr. Harvey W. Corbett of the firm of Helmle & Corbett, Architects, New York, will tell exactly how he makes cardboard models of buildings; how he uses them for study in the process of designing and as a means of presentation. Mr. Corbett will go into the most minute details of the making of these models and will illustrate his descriptions with photographs showing the tools used and the various operations. There will also be numerous interesting photographs of models and of details of models. The making of landscape features, trees, hedges, lawns and other parts of the entourage will be described, also such incidentals as automobiles and figures.—ED.

THE photographs presented in connection with this article this month represent a cardboard model of a proposed church building at the scale of one-eighth inch to the foot, and a cardboard model showing the design of the proposed George Washington Masonic National Memorial, at Alexandria, Va., at the scale of one thirty-second of an inch to the foot.

As I stated in the first installment of this article, in the April issue, when I began making architectural models of cardboard, I worked at a rather large scale, one-eighth inch to the foot—the model of the church is one of these. Finding that I could attain my purpose by means of a model at smaller scale with less labor, I began making models at one thirty-second of an inch to the foot—the model of the George Washington Memorial is one of these. It is one of the most recent, just completed, in fact.

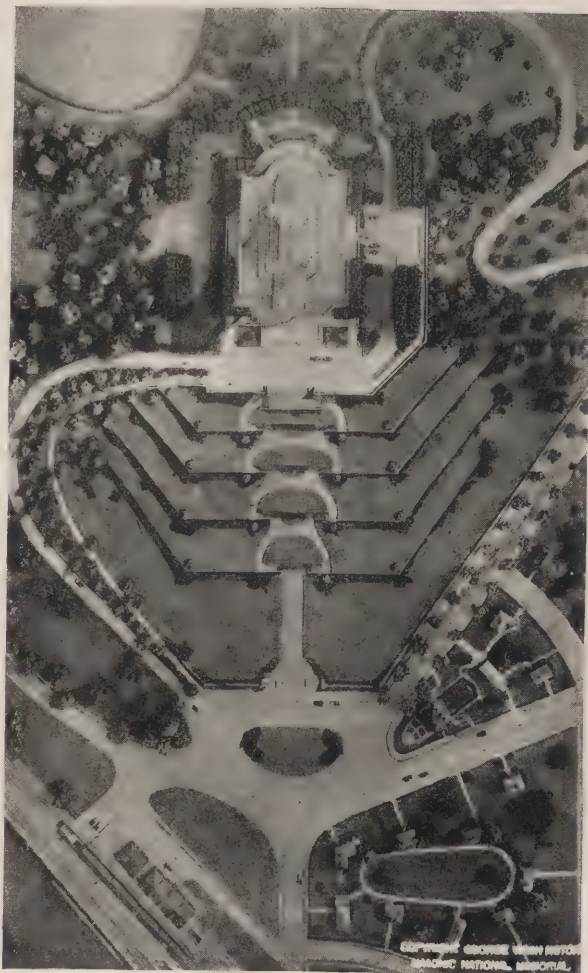
By referring to the photographs in these pages, one may see how much of the detail of the model at the larger scale had to be actually constructed of cardboard. It will be noted that the pilasters on the exterior and the mouldings have been built up, (see page 31). It will also be noted that the ceiling is an example of rather elaborate building up, six thicknesses of mounted watercolor paper having been used in producing the required depth. The ornament of the ceiling is drawn on the paper in ink and rendered in polychrome with water color. The view of a portion of the interior shown on page 32 also indicates the extent to which it is necessary to construct detail when making a model of any but the more simple type of building at so comparatively large a scale as one-eighth inch

to the foot. In this model the stained glass windows are represented by pieces of mica upon which the leading has been drawn in waterproof ink and the colors suggested by touches of water color. Miniature electric bulbs are concealed in the panels of some of the arches. The altar and its fittings, as well as the detail about the main entrance, were constructed with very considerable care.

This model consists of six pieces. There is a base or platform section, including the floor of the church, the portion of the walls from the floor level to grade and the grounds and walks around the building. Upon this may be placed, in their proper relation, the four walls. Each wall section is of a thickness that corresponds in the scale of the model to the thickness of the walls of the building. The walls are built of mounted watercolor paper, hollow but reinforced and firmly braced within. These walls are held in place on the platform by small dowels. Resting on the walls and held in place by dowels is the roof portion, on the under side of which is the ceiling shown in the photograph reproduced on page 30.

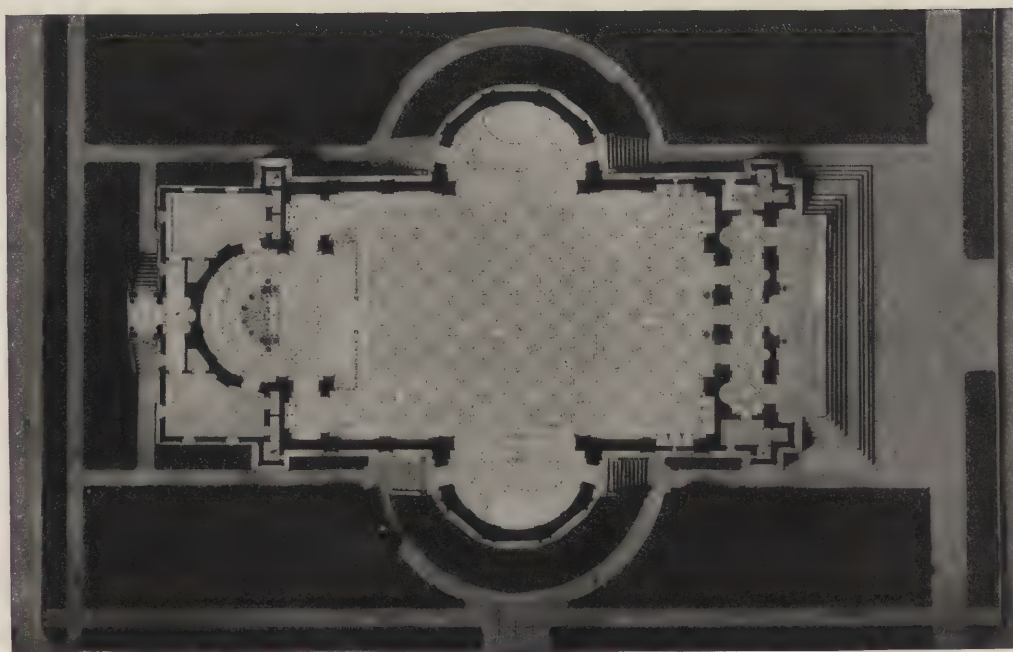
Contrast with the model of the church the small-scale model of the Washington Memorial in which by far the greater part of the detail that would, of necessity, have been constructed in a model at one-eighth inch scale has been represented by rendering on the small-scale model. There is still quite enough to construct in a model of this kind.

The base of this model is built up to correctly represent the contour of the ground, the levels of the proposed terraces, and the grades of the roadways and paths—all the changes of level in the grounds. This was done by constructing a grid of

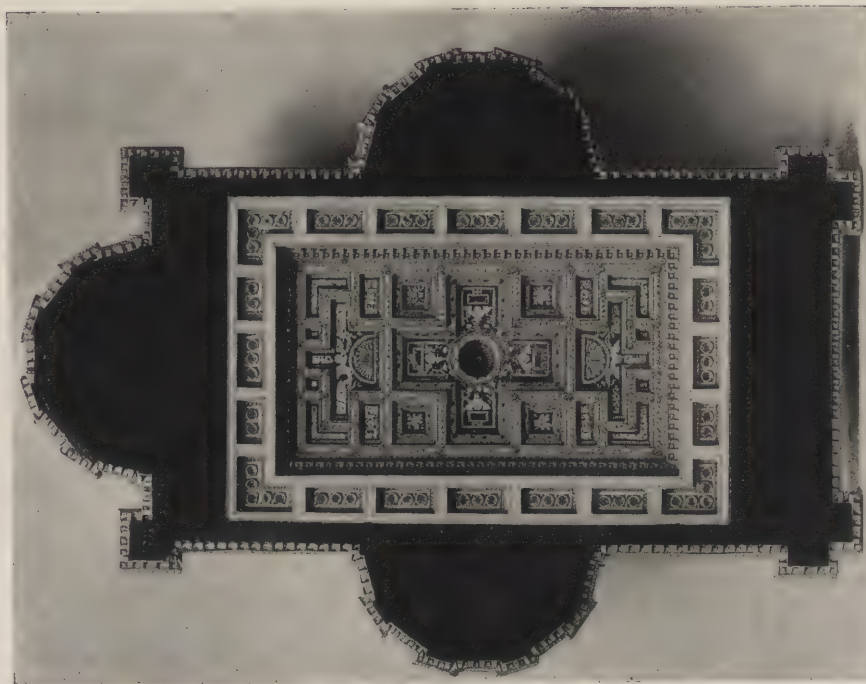


*Plan View of Model for The George Washington Masonic National Memorial, Alexandria, Va.
Helmle & Corbett, Architects.*

PENCIL POINTS



Photograph of Base of Model for a Proposed Church Building. Scale of Model, One-eighth Inch Equals One Foot. Helmle & Corbett, Architects.

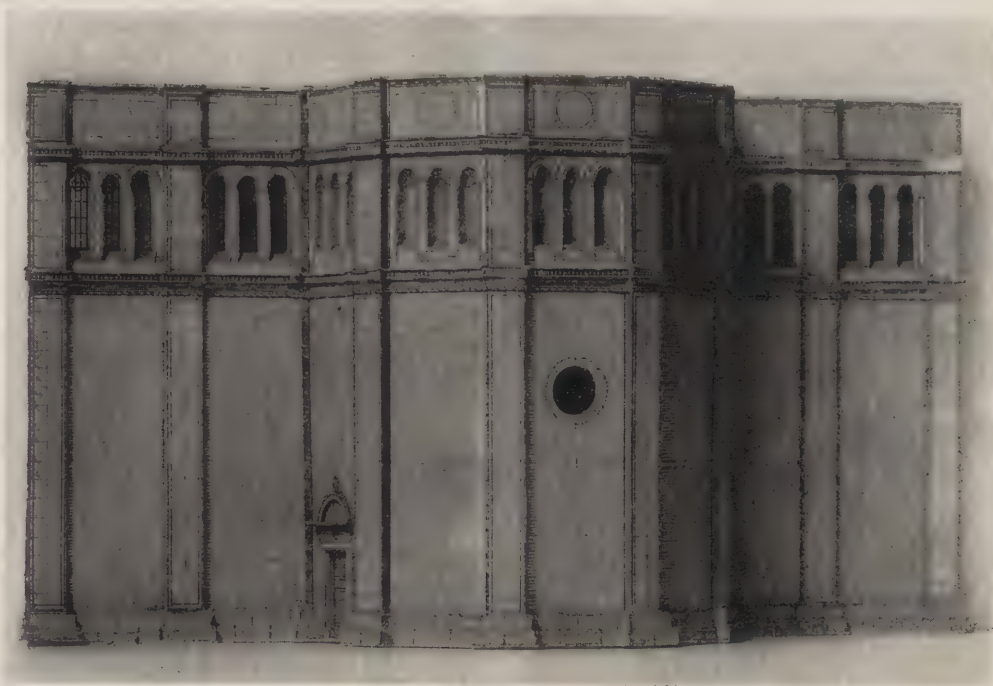


Photograph of Under Side of Roof Portion of Model for a Proposed Church Building, Showing Coffered Ceiling with Polychrome Decoration. Helmle & Corbett, Architects.

PENCIL POINTS



*Front Portion of Model for a Proposed Church Building.
Helmle & Corbett, Architects.*



*One of the Side-pieces of Model for a Proposed Church Building.
Helmle & Corbett, Architects.*

PENCIL POINTS

mat board on the same plan as the cardboard arrangement used in an egg crate, the top edges of the pieces of cardboard were cut to the contour. One set of cardboard strips extends from side to side, while the other set extends lengthwise of the base. Where they cross, they are notched and halved into each other. The plan of the grounds was rendered on a sheet of mounted watercolor paper, the lines of the terraces were cut through and the whole laid down on the foundation just described, the flaps representing the terraces being forced up. The retaining walls were then built of cardboard set on edge. The point at which the memorial will stand is about one hundred feet above the level at the railroad station. The memorial itself will be two hundred feet in height.

The model shows trees, shrubs, areas of grass roads and other features all worked out to scale and in the appropriate colors.

In the plan view of the model reproduced on page 29, the memorial will be seen near the top of

the picture. In the lower left-hand corner is the railway station at Alexandria, Va., with a train standing at the platform. In the lower right-hand corner is a block of suburban homes, representing the character of the outskirts of the city adjoining the site upon which the memorial is to be built. On the roadways are models of automobiles done to scale.

The George Washington Masonic National Memorial will contain in the central portion of the ground floor a large memorial hall. At the end of the hall opposite the entrance will stand a statue of George Washington of heroic size. The walls of the hall will be surrounded by a colonnade and it will be lighted with clearstory windows at the sides. Beneath these windows will be mural paintings of an historic character. At right and left of the memorial hall will be the commandery room and a lodge room for the local lodge at Alexandria. At the left of the entrance will be a room, fitted up as

(Continued on page 37)



Photograph of Portion of the Interior of Model for a Proposed Church Building. Scale of Model, One eighth Inch Equals One Foot. Helmle & Corbett, Architects.

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THE AMERICAN ACADEMY IN ROME.

FROM a letter received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, the Director, we quote the following:

"Mr. and Mrs. Mead have been in town through the month, and Mr. Mead has come to the Academy almost every morning for two hours. Mr. Mead has been present at the meeting of the Academic Council, and he has likewise attended a meeting of the Library Committee. He has signed a power of attorney which enables me to act in cases of emergency, a thing which Lawyer Del Frate has been anxious to secure for some time. His Majesty the King has decorated Mr. Mead with the order of Commendatore of the Crown of Italy, and Mr. Mead has called upon the King to thank him for the honor. Mr. Mead has always been a champion of Italian architecture, and the good which he has brought to America can scarcely be overestimated. As far as Italy is concerned, the Renaissance in America for Italian architecture has caused many students and architects to visit Italy. The faith which Mr. Mead has in the civilizing effect of Italy upon America is amply proved by the fact that he was an original incorporator of the Academy and has been, for the last eleven years, its president. He has called upon Mr. H. Nelson Gay, who now possesses the largest library upon the Risorgimento. Mr. Mead has gone over the proposed budget for next year, and he has given us great assistance in its preparation. Just before leaving Rome, Mr. and Mrs. Mead went through the studios. They have gone to Sestri Levante, near Genoa, to recover from a rather strenuous time in Rome.

"Mr. Vitale has likewise been in town during the last month. He has attended the meetings of the Faculty and arranged the new plants and trees about the Main Building. We now have a fine set of potted laurels. Mr. Kendall is giving these various plants, at least those which exceed the \$200 voted for quick-growing plants, by the trustees.

"Professors Whicher and McCrea have both been asked to lecture before the British and American Archaeological Association.

"Professor Fairbanks has suffered from a touch of pneumonia and pleurisy, but he is now about again; in fact, he has gone to Florence for a few days.

"Landscape Architect Lawson is still in Paris, working on the graves of American soldiers buried in France and England. His immediate chief has gone to America, so that he is now occupying a position of responsibility.

"One excursion was made, namely that to the Villa Cattena, situated between Tivoli and Frascati. This is a fine Renaissance villa, of considerable historical importance, and yet it has never been drawn out or photographed, due to the fact that it is seven miles from the nearest railroad station and in an inaccessible district. Landscape Architect Griswold is planning to measure the villa.

"A young Philippino architect, graduate of the University of Pennsylvania, has arrived.

"The banking situation in Rome is still unsolved, although this problem will be one of the first to be considered by the new ministry, which has just been formed. The American Ambassador and Lawyer Del Frate have both been helping us to see if it is possible to draw out some of our money, but without success—we are to be treated like all other creditors. The American Am-

bassador himself has money tied up in the bank. Professor Emerson, head of the Department of Architecture at the Massachusetts Institute of Technology, has sent \$750 to assist those "Tech" men who are in difficulties on account of the closing of the Banca di Sconto, and other visiting students at the Academy have received assistance from their respective organizations in America.

"A Mr. George G. Booth, a publisher from Detroit, Michigan, has shown great interest in the Academy. He came here twice and has not only seen all the studios, but has also gone into the question of our finances. Mr. Lemond saw him in America during the drive last year and has now secured a promise from him to contribute to the Academy when Mr. Booth returns to America.

"The washing plant is now installed and working; there are, however, a few adjustments which still need to be made in order to perfect it.

"A Swiss lady, who owns a fine ancestral castle in Switzerland, is trying to start a Swiss academy, and she has come to us not only for information, but also to see if it would be possible for the two academies to collaborate. She is willing to take our students into residence, and would like to have a similar privilege for her students when they come to Rome. I have explained to her that this is impossible, but that we would be glad to assist her students in every other way possible. Even under these conditions she is willing to take our students into residence, and perhaps something of this nature might be advantageous to our students after they have fulfilled their terms at the Academy and for the Musicians.

KEITH CHEETHAM is the winner of the Chicago Architectural Club's Annual Foreign Travelling Scholarship for the year 1922.

Mr. Cheetham was born in Australia, but for the past few years has been a Chicagoan and a very active member of the Chicago Architectural Club.

He has been engaged in architectural work for several years, having started in his native country. He has been connected with a number of the leading architectural offices in the West and is now with Coolidge & Hodgdon, Chicago.

Mr. Cheetham will leave about June 1 for Paris, where he expects to meet A. S. Morphett, the winner of last year's scholarship, and make part of his journey in his company. He hopes to include in his tour many points of interest in Italy, France and England, and possibly some in Spain, studying as thoroughly as possible in each country.



KEITH CHEETHAM.

PENCIL POINTS

THE STUDY OF ARCHITECTURAL DESIGN.

(Continued from page 25)

balustrade of six feet in height, but this structure never shows its great size; there is quite a shock when one sees a human figure standing beside the balustrade.

When a greater height than four feet is needed for architectural effect, where a balustrade is used to crown a building, for instance, it can be set on a pedestal as in Figure 156, the building of the Chamber of Deputies, Paris, and as is also done in the Seventh Avenue façade of the Pennsylvania Railroad Station in New York City, so that the height of the motive may be proportioned to the scale of the composition, while the balustrade still retains its proper relation to human sizes.

Steps also have their relation to human uses; this is not a detail, but has an active and striking effect on design; many times sections are drawn showing ornate, complicated architectural motives surrounding a stairway which by reason of the size of the rise and tread of the angle from top to bottom, is nothing but a slide.

Fire and panic laws prevent a stair being made steeper than 8-inch rise and 9-inch tread—which gives the angle shown in a, Figure 157. Note the slope; it is the steepest that can be used for a service stair or a fire tower. A domestic stair—by that I mean the stair in a small house or bungalow—is frequently made with 7½-inch rise and 10½-inch tread, as shown in b, Figure 157; in the better class of such work the figures are more apt to be 7-inch rise, 11-inch tread. The stair so conveniently laid out with a scale, with 6-inch rise and 12-inch tread, is shown in c of the same figure. None of these are "monumental" stairs; they are not suitable for the important vertical communications of monumental buildings. For such a stairway, a 5½-inch rise with a 13½-inch tread, or a 5-inch rise and a 14-inch tread, as shown in d, Figure 157, is more suitable.

The effect of these different slopes on a section is considerable. In the first place, the lower the individual riser, the greater the number which will be required to compass a given height, and hence the greater number of treads required, and as, in general, the decrease in size of rise is accompanied by an increase in size of tread, it is easily seen that the more monumental the stairway, the greater becomes its total length, the total height being constant.

For an outside stair—the steps to a public building, or steps in a city park—an angle such as is shown in e, Figure 157, with a rise of 4 inches and tread of 16 inches is proper and fitting. Such stairs are not uncommon abroad. While in this country we have been in the habit of making our stairs too steep, possibly because of our great dependence on the elevator, in Europe on the other hand, they have been generally studied for monumental effect. The following table of examples is of interest in study:—

INTERIOR STAIRS

FRANCE

Example	Height of Rise in Inches	Width of Tread in Inches	Angle of Slope in Degrees
Louvre (Escalier de la Colonnade)	5¾"	15¾"	20
Versailles (Escalier de Mabre)	5½"	15¾"	19
Invalides (Great staircase designed for invalid veterans)	4¾"	15"	18
Luxembourg (Escalier de la Presidence)	5¾"	14½"	20
Hotel des Mousnaies	6"	13"	25

ITALY

Rome, Farnese Palace	5¾"	21¼"	14
Rome, Borghese Palace	5¾"	16¾"	19
Rome, Vatican Palace	4¾"	16"	16½
Rome, Vatican Museum	4½"	14½"	17½
Venice, Ducal Palace, Giant's Stair	5¾"	12"	26

These examples will show that in monumental architecture the slope of stairways is very gentle. Exterior stairways should be still more gentle in slope. The following table will be of value:—

EXTERIOR STAIRS

Example	Height of Rise in Inches	Width of Tread in Inches	Angle of Slope in Degrees
Versailles Stair of One Hundred Steps	5½"	15¾"	19
Fontainebleau Court of Honor Perron	4¾"	16¼"	15
Palais de Justice Court of Honor Perron	5¼"	16½"	18

Many of the palaces of Genoa, built on hillside, show the beauty that may be given by a well designed stair. That in the Balbi Palace, Figure 158, is a most interesting arrangement; it shows the very considerable place that stairways occupied in Italian Renaissance buildings: this stair is shown in plan in Figure 159.

To mention one or two fine examples in this country, the main stair in the Pennsylvania Railroad Station, New

York City—the stair from the big central waiting hall to the passage to Seventh Avenue—has a tread of 17 inches and a rise of 6 inches, to which must be added one-half inch of slope in the tread; and the monumental flight of steps across the front elevation of the new post-office building, New York City, has a tread of 18 inches and a rise of 5¼ inches with a one-quarter inch slope in the tread.

We must also remember that floor height plays a very important role in the question of scale. Small domestic buildings with a clear height of eight or nine feet, will give in façade very different character from the more pretentious city residence with its clear floor heights of twelve feet or more, and, in turn, monumental buildings with vaulted rooms from thirty to sixty feet in the clear, or more, will immediately affect the design of elevation; in these latter buildings, lower floors or parts of floors are introduced for service spaces—for functions which are not "monumental," in fact, and which are only used by the force belonging to the building.

In very high buildings the so-called "typical" floor, which makes up the largest part of the building and occupies most of the total height in façade, is standardized by the question of cost on the one hand, of light and air, etc., on the other; this height is in the neighborhood of eleven feet six inches to twelve feet, from floor to floor.

In conclusion, let me again borrow from Guadet. Study pure drawing as much as possible. Proportion plays an immense role in the study of architecture; the sense of proportion is first of all an artistic sense, and nothing develops the sense of proportion as does the exercise of drawing.

Proportions in architecture are difficult and delicate—they are even more so in nature; among a thousand faces there are not two identical, and yet they are all made on the same "program"—the composition is the same—it is only a question of proportions. And what is it to be able to draw? It is to perceive and then to express the specific proportions which distinguish and particularize the subject. He draws best who is most able to perceive the proportions. And this is best developed by sketching from executed work—to sharpen your perception of form of moldings and sizes and proportions—and sketching from nature to absorb ideas in rendering and presentation, the ideas of composition of entourage, of trees and shrubbery, and of color effects of the appearance of materials.

HAVE YOU AN ARCHITECTURAL CLUB?

IF THERE is an architectural club, or any society formed of men who are engaged in architectural work or in the study of architecture in your city, we shall appreciate it if you will send us the name of the organization, names of the officers, address of the secretary, and a statement of the aims and activities of the organization. We shall be glad to publish such information as news in PENCIL POINTS and to be of assistance in every way possible. Let the other fellows know that you are on the map.—ED.

ROYAL GOLD MEDAL FOR ARCHITECTURE.

IT is announced in the "Journal of the Royal Institute of British Architects" that Thomas Hastings (of the firm of Carrère & Hastings, Architects, New York) has been elected and his name will be submitted to His Majesty the King as a fit recipient of the Royal Gold Medal for Architecture for the year 1922. Upon the approval of the award by His Majesty, the Medal will be presented to Mr. Hastings at a formal meeting on June 26.

Since the institution of this medal by Queen Victoria in 1848, it has been conferred upon American architects on only two previous occasions; upon Richard Morris Hunt, in 1893, and upon Charles Follen McKim, in 1903.

PERSPECTIVE DRAWING, PART XXIII.

(Continued from page 21)

at point t' . Then lower a perpendicular until it intersects line CVP at point t'' , and continuing line $g'g''$ to point VPI on the Horizon Line, it will intersect line $t't''$ at point t''' , and enclosing with straight lines points $e'g't'''t''M$ and e' , we will obtain the perspective of the left wing of the building in its mass. Doing likewise, by uniting points $e''a''a''w'h'p''$, (lowering a perpendicular from point p'' to line $g'e'$), then uniting points $a''a''w'h'h''y'b''b''$ back again to a'' ; also uniting points y to w , and b'' to a'' , and again, g'' to g''' and g' to g'' , and M to g''' , etc., using the respective vanishing points as indicated in Figure 52, we have completed the operation and found the perspective of the mass of the entire building. By this we have obtained the true perspective of the mass of the building, cutting it out, as it were, from a solid block, working from a perspective plan, and are capable of proving each step to be mathematically correct and consistent with the requirements of the problem as indicated by the accompanying diagrams, and covering the minimum possible area for our operations. In the following issues we shall continue to develop the perspective, locating openings, and entering into the details, until we shall represent the entire building, complete in perspective.

PENCIL POINTS



LIONEL H. PRIES

LIONEL H. PRIES, who has just won the Le Brun Travelling Scholarship for 1922, was born in San Francisco, California. He attended public schools at Berkeley, California, also the Lick-Wilmerding Schools at San Francisco. He entered the University of California in 1916, and graduated with an A. B. degree in Architecture. He then took a year of graduate study under Professor Paul P. Cret at the University of Pennsylvania, where he received a degree of M. Arch.

Mr. Pries won the competition for the design of the "1920 Class Memorial Bench," now executed, on the campus of the University of California, one of the first uses of the native travertine. While at the University of Pennsylvania he was awarded the Arthur Spayd Brooke Medal for merit in design. He was placed second in the 1921 competition for the fellowship in architecture at the American Academy in Rome. He won an award in the Birch Burdette Long Sketch Competition for 1921.

Mr. Pries is a member of Tau Sigma Delta (architectural honorary) and Tau Beta Pi (engineering honorary). He is a member of the T-Square Club, Philadelphia.

He has been employed in the offices of Messrs. John Galen Howard and of Charles K. Sumner in San Francisco, and in the office of Mr. John P. B. Sinkler in Philadelphia. Mr. Pries is at present with Mr. Edgar V. Seeler, Architect, Philadelphia.

ST. LOUIS ARCHITECTURAL CLUB.

THE St. Louis Architectural Club from its humble beginning in 1894 has weathered the storms, grown, prospered and is starting on another season, the proud owner of its own quarters, with money in the bank, and a strong atelier.

Among the innovations announced for the coming year will be, the initial performance of an elaborate ritual ceremony of initiation, the result of much steady, earnest work on the part of the committee. Second, a "Bal Masque" that promises to rival any similar social function in the country will be given. Third, the traditional Theatrical Night will be revived. Fourth, "Ladies' Night" with a real, high-brow program will be a feature of the club's life. Fifth, stress will be laid on educational talks followed by quizzes. Sixth, there will be Radio Concerts.

At the annual meeting the following officers were elected: F. Ray Leimkuehler, President; Herbert Winkler, First Vice-President; Walter Wawrzyniak, Second

Vice-President; Theron Groves, Secretary; Herbert Reinhardt, Treasurer; Herman Frauenfelder, Carl Trebus, Robert Rosebrough, Executive Board; Hugo Graff, Trustee. In May, Wm. B. Ittner will talk to the club on school design.

FINAL COMPETITORS CHOSEN

THE juries that judged the work in the preliminary competitions for the Prizes of Rome, have chosen the final competitors as follows: In Architecture—L. P. Botting (M. I. T.); W. G. French (Cornell); C. F. Fuller (Harvard and Columbia); G. K. Geerlings (U. of Pa.); J. M. Hirschman (U. of Pa.); E. M. Loye (Minn. and Harvard); H. G. Marceau (Columbia); W. E. Meissner (M. I. T.); B. A. Weber (M. I. T.). In Painting—Alfred Floegel, R. G. Gifford and J. C. White. In Sculpture—Joseph Lore, L. T. Stevens and Wheeler Williams. A Fellowship for three years in the American Academy in Rome will be awarded to the winner in each subject.

SUMMER COURSES AT M. I. T.

THIS summer the Massachusetts Institute of Technology will offer courses in shades and shadows, perspective, office practice, elementary and advanced constructive design, elementary and intermediate architectural design and structural design. These courses will be given at the Rogers Building, Boston. If satisfactorily passed, any of these courses may be substituted for corresponding winter work. Full information concerning these courses can be had from Professor William Emerson, 491 Boylston Street, Boston, Mass.

NEW ROCHELLE ART ASSOCIATION

AN Architectural Exhibition was held recently by the New Rochelle Art Association, New Rochelle, N. Y. The membership list of this association includes the names of a great many artists of distinction. Some of these artists work and live in New Rochelle, while others have homes in that city and studios in New York. It is stated that more than fifty per cent of the illustrations in fifteen of the leading magazines in the country are produced by artists living in New Rochelle.

MECHANICS' INSTITUTE.

THE work of students in the architectural classes at the Mechanics' Institute School was exhibited at the Institute, 20 West 44th Street, New York City, April 11. Instruction in these classes is free. The training of students in architecture is one of the many branches of the educational work carried on under the direction of Mr. Louis Rouillion, at the Mechanics' Institute by The General Society of Mechanics and Tradesmen.

PERSONALS

H. T. LINDBERG, Architect, has opened a branch office, under the management of his associate, John F. Staub, in the Union National Bank Building, Houston, Texas.

OSCAR T. LANG, ARNOLD I. RAUGLAND AND CARROLL E. LEWIS have opened an office for the practice of Architecture and Engineering, under the firm name of Lang, Raugland & Lewis, at 627 Metropolitan Bank Building, Minneapolis, Minn.

WILLIAM C. PRESTO, Architect, has removed his offices to Suite 726, Conway Building, 111 West Washington Street, Chicago, Ill.

MALCOLM MacGREGOR KILDUFF has opened an office for the practice of architecture at 197 St. Mark's Place, New Brighton, Staten Island, N. Y.

LAYTON ALLEN AND HUBERT M. GARRIOTT have become associated in the practice of Architecture under the firm name of Allen & Garriott, Architects, with offices at 401 Lombard Building, Indianapolis, Ind., and 4 Masonic Building, Logansport, Ind.

WILLIAM C. TUCKER has just been retained as Consulting Sanitary Engineer for the proposed thirty-one story hotel on the block fronting on Lexington Avenue between 48th and 49th Streets, New York City. The equipment of this building will include a large swimming pool, club quarters, gymnasium, bowling alleys, etc.

GREGORY BURKITT WEBB, Architect, removed his offices on April 15 to the Winfield Building, 469 Fifth Avenue, New York.

GEO. J. LOBENSTEIN has opened an office for the practice of architecture at 859 Flatbush Ave., Brooklyn, N. Y.

HERMAN M. SOHN, Architect, has removed his offices to the Winfield Building, 469 Fifth Avenue, New York.

R. GUASTAVINO COMPANY, for many years located in the Flatiron Building, New York, will move on May 1, to 1133 Broadway.

OSCAR VATET, Architect, has removed his offices to 565 Fifth Avenue, New York City.

QUERIES

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, Metropolitan Tower, New York City.

Question—Will you kindly recommend some books of plates of designs for garden gates and balustrades of wrought iron? **Answer**—You will find much valuable material of this kind in the following works: "English Iron Work of the XVII and XVIII Centuries," J. Starkie Gardner. London, B. T. Batsford. New York, Wm. Heilburn. (Out of print.) "Motifs Divers de Serrurerie," Cesar Daly. "Rejería of the Spanish Renaissance," Byne and Stapley. New York, The Hispanic Society of New York. "Gardens Old and New," published by Country Life. "Garden Ornament," Gertrude Jekyll. "English and Scottish Wrought Iron Work," Murphy, London, B. T. Batsford. "Gardens of Italy," Bolton, Country Life. "Divers Styles des Jardins," Fougquier, Paris. (Out of print.) You may be able to see the "out of print" books in your nearest public library or may be able to obtain them through some dealer in architectural books.

Question—I shall regard it as a favor if you will give me information on "Concrete in History." Will you please answer in your Queries department? J. S. **Answer**—From the engineer's point of view, Hool and Johnson "Concrete Engineers' Handbook," price \$6.00, or Hool's "Concrete Engineer's Library," price \$20.50, both published by McGraw-Hill Book Company, Inc., New York, are excellent expositions of the subject of reinforced concrete. From the purely historical point of view we suggest the following: General History—Architectural Publication Society, "Dictionary of Architecture, I, p. 125. Viollet le Duc, "Dictionnaire Raisonne de l'Architecture," II, p. 205. Goodwin, George, "Prize Essay upon the Nature and Properties of Concrete and Its Application to Construction Up to the Present Period" (In "Transactions of the Institute of British Architects," 1835-36, Vol. I, pp. 1-37). Potter, Thomas, "Concrete: Its Uses in Buildings, from Foundations to Finish," 3d ed., London, Batsford, Pub., 1908. Potter, Thomas, "The Early Use of Concrete" (In the "American Architect and Building News," 1906, Vol. 89, June, p. 203-211). Phoenician and Carthaginian—Perrot and Chipiez, "Histoire de l'Art dans l'Antique," III, pp. 362-366. Roman—Choisy, Auguste, "L'Art de Batir Chez les Romains," Paris, 1873. Middleton, J. H., "The Remains of Ancient Rome," 2 V., London, 1892. Van Deman, E. B., "Methods of Determining the Date of Roman Concrete Monuments" (In the "American Journal of Archaeology," 1912, V. 16, pp. 230-251, 387-432, illus.). Van Deman, E. B., "The So-called Flavian Rostra," (In the "American Journal of Archaeology," 1909, V. 13, pp. 170-186, illus.). Van Deman, E. B., "The Porticus of Gaius and Lucius" (In the "American Journal of Archaeology," 1913, V. 17, pp. 14-28, illus., plate.). Van Deman, E. B., "The Atrium Vestae," Washington Carnegie Institution, 1909. Reinforced Concrete (hypothetical)—Normand, Ch., "Essai Sur l'Existence d'Une Architecture Metallique Antique" (In "Encyclopedia d'Architecture," 3d Series, II, p. 72).

Question—Will you give me the names of some books on rural architecture? O. L. S. **Answer**—We suggest the following books: "Old Cottages and Farm Houses in Sussex and Kent," also of similar title on the cottages and farm houses in East Anglia, Surrey, Shropshire, and the Cotswold District. These books are by Davie. They are very good, but since they are out of print are not easy to refer to. In addition to these we recommend: Weaver, "Gardens for the Small Country House," pub. by Country Life Press, London, Eng. "Farm Houses and Their Repair," Mary Northend, pub. by Little, Brown & Company, Boston. "Homes of Moderate Cost," Dalzell, pub. by "The American Architect," New York. "Houses and Gardens," Lutyens, pub. by Country Life Press, London, Eng.

Question—Will you give me the name of a good book on heating and ventilating? R. A. F. **Answer**—"Designing Heating and Ventilating Systems," by Charles A. Fuller, published by David Williams Co., New York.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of PENCIL POINTS, published monthly at Stamford, Conn., for April 1, 1922.

State of New York, } ss.,
County of New York, }

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared Ralph Reinhold, who, having been duly sworn according to law, deposes and says that he is the President of corporation publishing Pencil Points, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of	Post office address
Publisher, The Pencil Points Press, Inc.,	Stamford, Conn.
Editor, Eugene Clute,	One Madison Avenue, New York, N. Y.
Managing Editor, None.	
Business Managers, W. V. Montgomery and Ray D. Finel,	One Madison Avenue, New York, N. Y.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

The Pencil Points Press, Inc., Stamford, Conn.
Ralph Reinhold, One Madison Avenue, New York, N. Y.
F. W. Robinson, One Madison Avenue, New York, N. Y.
E. G. Nellis, One Madison Avenue, New York, N. Y.
Marion S. Carpenter, 907 Fifth Avenue, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is..... (This information is required from daily publications only.)

RALPH REINHOLD,
President.

Sworn to and subscribed before me this 14th day of March, 1922.

[SEAL.]

G. H. SYKES,
Notary Public.
My commission expires March 30, 1922.

PENCIL POINTS

ARCHITECTURAL DETAIL, PART XIII.

(Continued from page 12)

color vibration. Especially is this true of enamelled terra cotta where the individual pieces are larger than in tile faience.

The surface of faience or terra cotta body may contribute greatly to the vibrant quality of the finished enamel. A firm of faience manufacturers, unfortunately no longer numbered among the producers of this beautiful material, had recourse to a very uneven hand-pressed surface for the body of some of their tiles. When the enamel was thin and transparent such dimpling permitted the color to puddle and a difference in value ensued. This went even further in their multiple glazes (one color over another, fired simultaneously). Moreover when viewed at an angle the shine, to be found in all high glaze enamels, gave high lights throughout the slightly billowing surface, white caps on the crests of the waves, and enhanced the effect. Too little work like it is done now-a-days; possibly because the architects appreciate too little the capacities of the material, and do not demand it.

There is a marked difference between high-glaze, semi-gloss, and matt enamel, just as there is between the color effect of polished and honed marble. I have not had experience with the use of the two finishes together, but I believe a successful contrast might be obtained by using a hand finished, uneven body with high glaze and more brilliant color for the motif of a design and a mat finish for the darker backgrounds. Contrasting surface texture of this kind is well known in the half-glazed red body tile where the unglazed body of the subject projects to the upper surface and a deep blue, a green yellow, or other colored glaze is filled into the depressions.

Within the last few years, another contrasting of textures has been obtained by setting red or enamelled tile, flat or modelled, in a background of cement. See the illustration on page 11. This has been further developed by making depressions in a single tile, to be grouted full of cement. The last saves the expense of setting up smaller elements of a design where several fall within the limits of a single tile size. The projecting portions appear to be small tiles set like their larger fellows in the same cement background. That is an "imitation," same conscientious reader will exclaim. Doubtless the answer will be that cloisonné is also an insert and that the real cement joints are the ones at fault, not the cement run into the depressions of the tile to mark the design. In any event, when done well, the result has charm.

This brings us to the important role joints play in tile composition. A general rule is that large tile requires wide joints and small tile narrow ones. Uneven tile require wider joints than those having straight edges and a uniform dimension. The old fashioned, smoothly shaped and colored encaustic tile of fifty years ago, were usually laid without apparent joint. Modern encaustic tile can be had already set up, glued to paper sheets, with a comparatively narrow border. The two inch to four inch soft, red body tile of the hand-made variety, similar to the old Moravian, are usually given a three-sixteenths to five-sixteenths inch joint, a quarter of an inch being good practice. Ordinary quarry tile, 4 in. x 4 in. or 6 in. x 6 in., may have a joint varying from a quarter of an inch for the smaller size to five-eighths of an inch or even three-quarters of an inch for the 6 in. x 6 in., if a somewhat rougher effect pervades the accompanying architecture. A wider joint than this, unless perhaps for 9 in. x 9 in. quarries, looks forced. The enamelled quarries, say 4 in. x 4 in., should ordinarily have a quarter or even three-sixteenth inch joint, but it must be kept in mind that the width of the joint is just as much a part of the design as any other element. Indeed it sometimes affects the final appearance more than the tile itself. To push this matter further, it may be that one part of the design will require a narrow joint and another part a wider one. I have in mind a walk laid with a one-inch joint between large Dutch tile or brick that are 8 in. x 14 in., while the border is of 2½ in. x 8½ in. brick laid on edge and spaced five-eighths inch apart.

Except for very regular machine-cut tile, or for tile bedded in a cement background and having a flat surface, the joint is usually slightly depressed. Hand-made tile having a rounded edge require a depressed joint. Otherwise bits of the cement would creep up over uneven parts of the edges. It is not usual to rake the joint out or to depress it much, as that does not contribute to a feeling of security. Indeed it would be unwise to depress the joint markedly with a thin tile and in a floor it would leave spaces in which dirt could collect and which would make walking unpleasant and even dangerous. For the same reasons, in floor design avoid tile with deep depressions. It may be worth while to note that if joints were depressed, glazed tile would have to be specially enamelled on the edges. This is also true in turning corners or in fireplace openings when no frame is used.

The color of the joints is also very important in the final effect. White joints may retain their brilliancy in a wall, but not in a floor. Indeed, too white a joint is likely to be staring, although the red of ordinary red quarries looks well in contrast to a moderately white joint. At one time, it was quite customary to lay floor

tile in a dead black joint. If the tile are waxed or oiled (glazed tile should never be either waxed or oiled as a film forms on them and collects dirt), the black takes on a luster and may also become too prominent. Therefore some tile men advise a dark grey joint and others the natural color of a cement joint, which, after repeated oilings becomes almost black and has an old antique look that is quite pleasing.

The concrete under-bed of floors should be made of cement one part, sand three parts, and hard boiler cinders or small stone six parts, set down so the surface of the tile when bedded will finish flush with a surrounding floor. Spread a thin layer one-sixteenth inch thick of neat dry cement on this under surface just before bedding the tile. For wall tile, the thin neat cement can be brushed on as a sort of cream. It must not be allowed to stand. To bed floor tile wet them, set a section and on it lay a board, tapping it down to the right level. The bed is usually one-half inch thick when finished. Bed the tile in cement mortar one to two, or one to two and one-half, and if the joints are to be white or if the tile are enamelled or oiled, a floor may be grouted. An excellent way to clean a newly laid floor is with wet excelsior, waiting until the joints are sufficiently set up not to come out, but not long enough to allow the cement to set into the face of the tile. Over night may be about right, but cold will extend the period considerably.

Another method is to rub the tile with damp sawdust and wads of burlaps, but one must be careful the sawdust does not stick in the joints. After cleaning unglazed tile with the excelsior or sawdust, if cement continues to stick, go over it with muriatic acid and water, one to ten or one to fifteen parts. Obtain a good sharp, coarse grained sawdust and never use chestnut as it stains the floor. The mortar for joints should be not fatter than one part of cement to two parts of sand, else it is likely to chip, and not leaner than one to two and a half parts. Some authorities advise oiling unglazed tile with raw linseed oil before filling the joints and this is best done by wiping them over after they have been bedded. Exercise great care that no oil runs down between the joints, else cement put in later will come out. Other practical tile men advise against oiling tile at this stage on account of the danger from oil run into the joints and also because they claim certain unglazed tile are subject to a white efflorescence which may come up under the oiled surface and can then not be washed off. If black joints are specified and the tile have not been oiled, the joints must be carefully pointed with a narrow pointing trowel or jointer. Prevent the black mortar from touching the face of the tile. Make such mortar with one part of cement, one-sixth to one-eleventh of a part of fine powdered oxide of manganese, and two parts sand. The mortar is usually made up first and the manganese worked in till it is the right color, although it is really easier to mix if the manganese is put into the dry sand and cement and the water added afterward. For that samples must be first made and dried and the proportions noted. Manganese is less dirty than lamp black.

If the tile have not been oiled before pointing, wait a month before oiling, to allow any efflorescence to come to the surface. Then scrub with muriatic acid and water, one to six, and wash this off with three rinsings of clean water, wiping up between rinsings. Wait a day to see if the tile remain clear and then if no efflorescence appears, wash over with clear water and mop up so the surface will be quite dry, but the tile damp below. Immediately put on pure raw linseed oil and turpentine in equal parts and soak for twenty minutes. Take burlap or rags and rub absolutely dry. Repeat the oil application every three months for a year and then once a year. In place of oil, beeswax dissolved in turpentine may be used, or prepared floor wax. Good results have been obtained by using a prepared cement floor filler and then waxing. The last method gives a high gloss.

Another means of applying the later oilings is to dampen sawdust and fill it with raw linseed oil. This can be swept over the floor, some authorities say, at intervals of a month. Unglazed wall tile may be oiled or waxed with a cloth. Waxed tile should be well polished with a brush and woolen cloth, as are waxed oak floors.

ARCHITECTURAL MODELS OF CARDBOARD.

(Continued from page 32)

a replica of the Masonic lodge room at Alexandria in which George Washington presided as master. Full data concerning this room have been preserved and the reproduction will be faithful in every particular. The room will be furnished with old pieces and it will contain original records treasured by the lodge in Alexandria.

The model of the memorial itself is so constructed that the tower portion can be lifted off in three sections. Other models for this portion of the memorial were carefully made and tried out and the design shown in the illustration on the lower part of page 28 finally adopted. This view shows only a part of the grounds represented in the model and the painted landscape background. In the next issue I shall go more deeply into the process of making models of this kind.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION PART III.

BY OTTO GAERTNER

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

The Constructing and Proportioning of the Parts of the Fireplace.—In the case of the fireplace the first things to determine are the size and the design. Fireplace openings are usually made from thirty to sixty inches wide and from thirty to forty-eight inches high. They should not be as high as they are wide, although the smaller-size fireplaces generally work properly if all the other features connected therewith are correctly proportioned and constructed. The usual proportions are for the height to be about two-thirds to three-quarters of the width. If the opening is too high, too much cold air will be drawn in over the fire instead of through it, so that the draft will be retarded. To remedy this a metal shield must be set into the upper part of the opening to reduce its height. But such a shield is difficult to design so that it will tie in with the fireplace design and not look like an after-thought.

The depth of the fireplace opening is usually made from one-half to two-thirds its height, but it should never be less than sixteen inches for burning coal and eighteen inches for burning wood. Twenty inches is better for burning wood in medium-size fireplaces and twenty-four inches for large fireplaces. The depth should never be more than twenty-four inches, however, as a deep fireplace does not throw much heat into the room. To increase the amount of heat thrown out, the sides of the opening should extend four inches back from the facing and at right angles to it and then back on a splay of two inches to the foot, or a little more, toward the centre of the fireplace. This will make the width of the fireplace less at the back than at the front, and the smaller dimension must, of course, be considered in connection with the length of the logs to be burned or the size of the grate to be installed.

The back of the fireplace opening should be built upward with a forward curve or slant starting above the hearth at approximately one-third the height of the opening and extending to at least six or eight inches above the head of the opening, where the top of this slant forms the smoke shelf or back-draft shelf. As the word back-draft implies, the purpose of this shelf is to prevent a downward-moving draft from blowing the smoke back into the room. When a fire is started, the heated air starting up the flue causes a movement therein and the colder and heavier air is forced downward. But since the rising heated air occupies the forward part of the space, the downward draft occurs at the rear of the space where it strikes the draft shelf and is deflected in the direction of, and upward with, the rising draft. This shelf should be cleaned of all mortar drippings when the chimney is built, and it should be kept free from soot afterward, otherwise this will lie at an angle from the front toward the back and the back-draft will be deflected downward into the fireplace carrying smoke and soot with it into the room. This shelf should be at least eight inches wide, and wider, if possible. If it is wide enough, its top surface can be covered with cement mortar to form a surface with a concave segmental cross section so as to deflect the downward draft to meet the upward draft at a tangent instead of at right angles. This helps to eliminate some of the friction of the opposing air currents.

The head of the opening should be supported on an angle-iron lintel, and the soffit of the head should never be wider than four inches. On the inside it should extend vertically at least four inches before being built upward and inward, on a slant toward the edge of the smoke shelf, to form one side of the throat. If the soffit is wider than four inches there is danger of the smoke striking it and being deflected into the room. This upward slant should be built with the corners clipped off as before mentioned, but the surface may be parged to make it smoother since it is accessible and the parging can readily be replaced. The slant deflects the smoke into the throat and thus into the smoke chamber above. The head of the opening may be made a brick or stone arch, in which case the angle-iron lintel may be omitted.

The front edge of the smoke shelf forms the rear of the throat whose position is governed by the depth of the fireplace, and the size, shape and location of the smoke flue above. It should be built well toward the front of the fireplace and extend the entire width of the

fireplace opening. Its area should be from one to one and one-half times the area of the smoke flue, but its width should never be less than three inches and more than four and one-half inches. A throat that is too large will let the air escape toward the flue before it is thoroughly heated, resulting in less velocity and a poor draft. There are several iron throat and damper combinations on the market that may be used in connection with the fireplace. Such a combination usually consists of a pivoted or hinged damper set into a frame and regulated by a bar back of the fireplace opening, and also to support the masonry forming the head of the opening. But when such a combination is used the smoke shelf should not be omitted. It will be necessary, however, to raise it about eight inches or more.

It is important to see that the patented throat and damper, if used, has the opening as already called for; though it can be reduced in size by means of the damper.

The space from the top of the smoke shelf to the flue is called the smoke chamber. It should begin at the ends of the throat and its sides should extend vertically from the smoke shelf for a few inches, and then its sides should slope upward toward the flue at an angle of sixty degrees from the horizontal. These sides should have smooth surfaces and if they are built of bricks or stones, by corbeling, the corners should be clipped off them. The surfaces, however, must not be parged with mortar. The mortar is sure to crack and peel off leaving them rough to retard the draft, especially if the corners are not clipped off before the parging is done. There are also patented iron sides sold for smoke chambers. They are set first and then the masonry is placed against them, the iron being the finished surface.

After the fireplace opening has been properly proportioned, the next item under consideration is the flue. The size of the flue depends upon its shape, whether it is lined or unlined, the distance from its start to the top of the chimney, the kind of fuel to be used, and the size of the fireplace opening. The rising draft has a circular motion and therefore a round flue is the best one to use. The areas of the flues being equal, the next best one to use is the square flue, with a slight loss of draft on account of the friction caused by the dead corners, and then the flue of oblong cross section with still more loss of draft on account of the additional friction caused by the dead ends. Therefore, for any given condition the round flue will have the smallest area, and the oblong one will have the largest. The latter should not have an opening less than two thirds as wide as it is long, and no flue should be less than eight inches wide. A narrow flue is easily choked with soot and it is difficult to keep it clean.

A metal or tile-lined flue has a better draft than an unlined one, since the smooth surface of the latter causes less friction than the unlined one. All flues should be lined, and most building codes and ordinances insist upon it for safety. An unlined flue should not be parged as the parging mortar is likely to peel off and choke the flue if it has a bend in it near the bottom.

In heating and ventilating work the higher the flue is, the greater is the draft efficiency—and therefore a flue one story high should be, relatively, larger than one that is three stories high. And as mentioned before, the type of fuel must also be considered. Wood and bituminous coal require larger flues than does anthracite coal. For practical purposes, however, there is generally no distinction made between round and square flues, lined and unlined flues, and between flues one and three stories high. One's judgment and experience must aid in proportioning the size of the flue. The writer generally proportions the area of a lined flue for a fireplace burning wood or soft coal as follows: Area of an oblong flue, one-tenth of the area of the fireplace opening for a flue one or two stories high and one-twelfth of the area of the fireplace opening for a flue three stories high. Area of a round flue, one-twelfth of the area of the fireplace opening for a flue one or two stories high, and one-fifteenth of the area of the fireplace opening for a flue three stories high. These flue areas may be decreased about thirty per cent. when hard coal is to be burned. No flue, however, should have an area of less than seventy square inches. The area of an unlined flue one story high may be made one-eighth of the area of the fireplace opening, except for a large fireplace where it is better to use a slightly smaller flue so that not so much cold air must be moved before a good draft is created when starting a fire.

The flue should start directly over the centre of the smoke chamber. If this is done, both sides of the fireplace will have the same amount of draft. Usually, when one side draws better than the other, smoke escapes into the room from the side which has the less draft. The flue should also be built as straight as possible. If offsets are made, they should be made at an angle of not less than forty-five degrees with the horizontal, and preferably at an angle of sixty degrees or more. The straighter the flue is, the less likely it is to be obstructed

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by deposits of mortar drippings, brick, and other rubbish while it is being built, and by soot afterward. Our chimney fires are often caused by deposits of soot, with the consequent danger of the sparks being thrown upon the roof. Where bends occur in the flue, precautions should be taken while it is being built, so that it may be left clean when it is finished. For instance, openings can be left at the bends in the flue for cleaning out deposits of rubbish, after which the openings can be closed with masonry. Another precaution is to tie one or two burlap bags at the centre with a rope and to draw them up as the flue is built. The top of the flue should be covered temporarily whenever the work is stopped and when the flue is finished. During its use the flue should be cleaned about once a year with a weighted brush or bundle of rags.

There should not be any openings into the flue other than the one of the fireplace which it is to serve, otherwise the draft will be affected and the fire hazard for the building will be increased. The masonry around the flue should be at least eight inches thick if it is of brick, and twelve inches or more if it is of stone. If the flue is lined, four inches of the brick may be used, but it is better to have eight inches for exposed or exterior sides of the flue so as to provide a dryer and warmer flue, which will make starting a fire easier and avoid smoking. There should always be eight inches of brickwork or four inches of brick and two inches of other fireproofing material between the lined flue and any wood beams, studs, rafters, or furring. The exterior eight-inch thick structural tile wall of a stucco house may form the one side of a chimney if it is well bonded to the brickwork of the other sides.

The chimney should extend at least two and one-half feet above the highest point of the roof, and it should extend at least four feet above the roof where it comes through. It should be capped with brick, stone, terra cotta, or concrete, having a minimum pitch of one inch on top. The flue lining should extend at least two inches above the top of the chimney cap. This insures the flue being of the same size throughout instead of being cut down in area by a projecting cap. All joints in the lining should fit closely, even where they are cut to suit changes in direction, and no broken pieces should be used. If there is another flue in the same chimney, the two flues should be separated by a four-inch wythe, but if they are both lined, they may be placed with one inch of mortar between them, provided that no joints in the flues come within six inches of each other. Not more than two flues may be built together without a wythe between them, the best practice being to separate all flues by wythes, in order to help to stop air leakage and to bond the chimney walls together. External conditions must be studied to see that the draft is not affected by adjoining trees or buildings.

But there are still a few items in reference to the fireplace to be considered. Its walls should not be less than eight inches thick if of brick and not less than twelve inches if of stone. If brick is used, the back and side linings should preferably be made of fire brick set in fire clay. The same applies to the back hearth. The front hearth may be of brick, stone, marble, or tile, laid on a concrete fill placed over a trimmer arch or over a concrete slab. Sometimes soapstone, two inches thick, is used for the back hearth and linings, and sometimes cast iron is used for the linings. Soapstone and cast iron linings must be set so as to allow for expansion and contraction, and for this reason a one-inch space must be left behind them. The rough fireplace must be built large enough to receive these linings and to insure a finished fireplace of the proper proportions. The space behind the linings must be closed off at the top with masonry, and this is specially important when the sides of the rough fireplace are built straight back instead of on a splay. The facing of the fireplace may be of brick, stone, marble or tile, the last two generally having a narrow metal protective frame around the opening. When marble is used, care must be taken to select a kind that will not be affected readily by the heat, as in the case of marble with seams that are doctored with sealing wax. Since the depth of the opening is measured from the facing, allowance must be made for the thickness of applied facings when building the rough opening. If a wood mantel is to be used, the facing should be made at least eight inches wide at the sides and top; most building codes demanding twelve inches at the top, which prevents scorching the mantel.

The fireplace may be provided with an ash dump. It consists of a hinged or pivoted iron cover set into an iron frame about five inches by eight inches, and is placed in the back hearth with an unlined flue extending from it about three feet above the cellar floor. There an iron clean-out door is placed for removing the ashes that are brushed into the dump. The flue from the ash dump may be connected to a removable galvanized iron ash can cover, permitting the ashes to fall directly into the can below.

All mortar used in connection with the work should be Portland cement mortar. No masonry should be corbelled out more than eight inches and this amount of projection should be secured by at least five courses. However, if the wall from which the corbeling is done is heavy enough to carry the load, the projection may be made greater, and supported on iron beams or angles covered by a plate to receive the masonry.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Modern Memorials in Marble—Handsome 80-page brochure. Sixty-six illustrations in color showing ancient and modern memorials in marble. Exterior and interior views. 7½ x 10½ in. Applicants are requested to use business letterhead. Vermont Marble Co., Procter, Vt.

Specifications and Construction Details—Booklet showing complete line of door hangers and special hardware for elevator and other sliding doors. Sections showing construction and application. 32 pp. 8½ x 11 in. Reliance-Grant Elevator Equipment Corp., 101 Park Avenue, New York.

Truscon Steel Basement Windows—Detail sheet showing improved type of equipment. Sections and working drawings. 8½ x 11 in. Truscon Steel Co., 250 West Lafayette Blvd., Detroit, Mich.

Chains and Hardware Specialties—Catalog No. 11. Showing complete line of window and other chains for use in buildings, sash fixtures, etc. 40 pp. 7 x 9 in. Smith & Egge Mfg. Co., Bridgeport, Conn.

Ben-Ox Interchangeable Devices—Bulletin illustrating and describing special wiring devices for suspended lighting units. 16 pp. 8 x 10½ in. Benjamin Electric Mfg. Co., 847 W. Jackson Blvd., Chicago, Ill.

Swimming Pool Sanitation—Special bulletin covering this subject, with diagrams and illustrations of typical pools. 8 pp. 8½ x 11 in. R. U. V. Co., 165 Broadway, New York.

Zinc as a Paint Pigment—Scientific treatise on properties of zinc oxide. 16 pp. 6 x 9 in. New Jersey Zinc Co., 160 Front Street, New York.

Doors for the Home and for the Public Library—Two special bulletins covering modern metal equipment for these two classes of buildings. Entrances, elevator enclosures, stairs, halls and fire exits, corridor and communicating doors and doors for special uses are considered. Specifications and diagrams showing construction and suggestions for ordering. 8½ x 11 in. 16 pp. Dahlstrom Metallic Door Co., Jamestown, N. Y.

Roofing Slate—Illustrated brochure showing antique roofs and modern applications of slate in well designed buildings. Two pages of detail sheets and complete specification data. 24 pp. 8½ x 11 in. Vendor Slate Co., Easton, Pa.

Electrically Operated Temperature Regulating Systems—Catalog and handbook showing application of special devices for different requirements. Diagrams and technical data. 32 pp. 8½ x 11 in. Gold Car Heating and Lighting Co., Bush Terminal Bldg., Brooklyn, N. Y.

Ru-ber-oid Roofing Specialties—A collection of eight booklets illustrating and describing felt roofs, roll roofs, shingles, roof coatings, special paint and shingle stains. The Ru-ber-oid Co., 95 Madison Ave., New York.

Quarter Turn Packing Lock Valves—Complete booklet illustrating and describing this convenient valve for all types of steam, vapor and hot water heating systems. 32 pp. 4 x 7 in. Gorton & Lidgerwood Mfg. Co., 96 Liberty St., New York.

Moving Picture Equipment—Bulletins illustrating projectors and other moving picture equipment for theatres and other auditoriums. Nicholas Power Co., 88 Gold St., New York.

Industrial Chimneys—Booklet illustrating improved types of chimney construction with tables of sizes and capacities, illustrations showing various designs and complete data. 24 pp. 4 x 9 in. American Chimney Corp., 147 Fourth Ave., New York.

Forging Ahead in Business—Exposition of the courses offered by the Alexander Hamilton Institute. Complete survey of modern business science. 120 pp. Alexander Hamilton Institute, Astor Place, New York.

Supplies for Architects and Draftsmen—Complete catalog of everything required in the drafting room. Revised prices. Instructions for ordering, etc. 558 pp. Substantial cloth binding. 6 x 9 in. F. Weber & Co., 1220 Buttonwood St., Philadelphia, Pa.

Drafting Roof Furniture—Catalog of drafting room specialties, drawing instruments, filing equipment, etc. 32 pp. 6 x 9 in. C. F. Pease Co., 846 No. Franklin St., Chicago, Ill.

Brayman Watertight Drains—Booklet illustrated with diagrams and sections showing different types of drains for stables, garages, roofs and various special uses. 40 pp. 4 x 9 in. Jiffy Fire Hose Rack Co., 133 West 52nd St., New York.

Corner Beads and Metal Specialties—Six folders illustrating and describing improved types of corner beads, metal furring, picture mouldings and wire lath. Special emphasis on labor saving and fire protection. Milwaukee Corrugating Co., Milwaukee, Wis.

PENCIL POINTS

THE SCARAB CONVENTION.

THE sixth convention of the Scarab Fraternity, which, in recent years, has grown to be an annual affair, was held in Pittsburgh on March 31 and April 1. Last year the convention was held in St. Louis and if present plans are carried out the Scarabs in Chicago will play the part of host for the next conclave.

Scarab was founded at the University of Illinois in 1909 for the purpose of fostering good-fellowship and developing a professional spirit and stimulating friendly and personal co-operation. Its members are picked from the students who aspire to become architects, architectural engineers or landscape architects, and only those who have proven their aptitude are invited. While Scarab is a professional organization primarily for the younger men, it has among its members some of the most successful and most prominent practitioners of the day. Their radiating personalities lend prestige and dignity and their inspiration is fuel for the fire of enthusiasm burning in the hearts and souls of the younger Scarabs. They command respect, and their honest opinions are taken at face value. They are the men, who by a few words, can point the way to avoid the professional pitfalls and encourage a desire and belief in a code of ethics.

The Grand President, E. J. McDonald, called the convention to order at 10 A. M., in the Fine Arts Building at the Carnegie Institute of Technology. Clemens Nicholas, who is also a Grand Officer in the fraternity, journeyed from Jackson, Miss., to answer "here." The delegates were: Edwin E. Valentine, University of Illinois; Charles M. Gray, Washington University; W. J. McCormack, Armour Institute of Technology; J. H. Savolaine, State College of Pennsylvania; C. W. Hunt, Carnegie Institute of Technology; Bertram A. Weber, Massachusetts Institute of Technology; D. Kent Frohwerk, University of Kansas.

From the reports of the delegates one can glean an insight into the activities and principles of the fraternity. Each chapter offers some sort of a prize, be it a medal, books, cash, or what not, to the entire student body at their respective schools. At some institutions this sort of thing has become traditional, and the men anticipate it and apply their energy and ability to the maximum in order to survive the preliminaries.

There are a number of Scarabs in Europe who are enjoying their opportunity to study under the great masters by virtue of their ability to win a fellowship, be it known by one name or another. Some chapters boasted that during the last year every prize offered at their particular institution had been won by a member of the fraternity.

The social life of the young architect is not neglected. It is considered quite as essential to develop the personality as it is to develop the intellect and an insight into the mysteries of composition. Dances and smokers permit the members to find one another away from their major activity and permit the assimilation of ideals and idiosyncrasies. They are of further value in that human contact helps to wipe out provincialism. Lectures animate public spiritedness, and an opportunity to drink in the personalities and imbibe the ethereal ecstasies of a notable contemporary are foregone only under the most unusual circumstances.

The convention authorized the establishment of a national competition to be held some time during the coming year. The nature of the prize and the character of the problem will be left to the committee appointed to make arrangements. The committee consists of Gabriel Ferrand, Louis H. Sullivan and F. R. Leimkuhler.

In order to build up a closer bond of good-fellowship and to make the interrelation of one chapter to another a more personal sort of thing, a travelling exhibit is to become an annual affair. There is one in the process of circulation at the present time and it is being received with great favor wherever it is hung. Within two months every school that accepted the invitation to assist in building up a noteworthy exhibit will have enjoyed the opportunity of learning what is being done by their student contemporaries.

The Scarab medal is to be offered as a prize each year at each school where a chapter of the fraternity is established. This medal is to be of the same design for all schools. The old style medal will be given until the new one, which is to have several new ideas incorporated, is designed.

With the increasing number of alumni Scarabs in the principal architectural circles, it is planned to establish alumni chapters. The nucleus for such organizations has already made its influence felt by combining the principles of the fraternity with the practice of their profession according to the highest ideals and ethics.

The Grand Officers who were elected to inspire the chapters to greater effort and to influence its policies for the coming year are: Clemens Nicholas, Washington University; H. R. Gamble, Pennsylvania State College; E. E. Valentine, University of Illinois.

It seems only fitting and proper that the business of a convention be tempered with entertainment to direct the imagination into a lighter vein. The Scarabs at Pittsburgh, and every one else with whom their visitors came into contact, proved by their sincerity and the ample evidence of their hospitality that they were hosts of no mean ability. The visitors' every want was anticipated and provided for in a manner befitting a king.

On the evening of the first day the visitors were guests at the Little Theatre in the Fine Arts Building. Dancing took place in the foyer and corridors of the building after the play.

On the last evening the Scarabs from far and near gathered at the Schenley Hotel to banquet and to become better acquainted with one another. C. W. Hunt acted as toast master and the retiring Grand President, Edgar J. McDonald, spoke in his usual delightful manner. Clemens Nicholas, the newly-elected leader, also responded with a speech. But those who came from afar were well repaid when Mr. Hornbostle radiated his enthusiasm and related his impressions of the work done by Scarab. Those who met him for the first time will never forget his charming personality and his marvelous power of speech.

DALLAS ARCHITECTURAL CLUB HOLDS ITS FIRST ANNUAL EXHIBITION

THE Dallas Architectural Club held its first annual exhibition at the Jefferson Hotel recently. From every angle it was more successful than we had dared to hope for. Over five thousand people viewed the exhibition which contained some three hundred pieces. The exhibition was an epitome of state architecture as every section of the state was well represented.

A series of lectures was held during the week on architectural subjects. The speakers were Professor J. J. Kellogg of A. and M. College, who delivered an informal address on "Traveling Through Italy"; E. A. Wood, manager of the Civic and Service Departments of the Chamber of Commerce, on "City Planning"; Miss Marian Long of the College of Industrial Arts at Denton, who gave an illustrated lecture on "Interior Decoration"; Professor S. E. Gideon of the University of Texas, who spoke on "Our Home Products in Architecture and Art"; Professor W. W. Watkins of Rice Institute at Houston, whose subject was "Church Building of the Gothic Period in England."

The lectures were very well attended and it was estimated that at least a thousand heard them.

We are greatly indebted to Mr. Charles Mangold of the Jefferson Hotel who was broad enough to see the great benefit that was to be derived from the exhibition and who donated the use of the ball room for the exhibition and who worked hard to make it a success. We are also indebted to the press and the architectural papers for their ever loyal support of things architectural.

We are now preparing for our next exhibition and we hope to make it not better, as the past one was excellent, but we hope to enlarge and get a greater state showing. It has attracted the attention of every person interested in architecture and they realize that the Dallas Architectural Club is a factor in the architectural world and that it is working not selfishly, but for the good of the profession at large. Our atelier is still taking down the awards and we soon hope to have new quarters, as the local Society of Architects has donated \$10 a month towards the rental of quarters, and Mr. C. D. Hill, a local architect, has also given \$5 a month, so just watch us grow.

AWARDS IN THE EBERHARD FABER SKETCH COMPETITION

THE jury in the Eberhard Faber Sketch Competition, which closed at noon on April 1, has awarded the prizes as follows:

First Prize, Fifty Dollars, to John F. Jackson, New York City, for the sketch "At Pier 15, East River, New York." Second Prize, Twenty-five Dollars, to Walter T. Vohlberg, Boston, Mass., for the sketch "Porte Nord de Menneton-sur Cier." Third Prize, Ten Dollars, to Hugh McLean Poe, John Herron Art School, Indianapolis, Ind., for a portrait sketch. Fourth Prize, Five Dollars, to C. Harold Kiefner, New York City, for "Scene in Mt. Rainier National Park." Fifth Prize, Five Dollars, to W. H. Butterfield, New York, for "Les Baux, Provence." Sixth Prize, Five Dollars, to H. G. Ripley, Boston, Mass.

In judging the sketches submitted the jurors endeavored to adhere strictly to the conditions of the program which stated that the judgment was to be made on the basis of pictorial quality, skill in pencil technique and adaptability to use in advertising the Van Dyke drawing pencils. Giving due weight to the last mentioned requirement resulted in the placing of some drawings that were excellent in other ways, lower than would have been the case if adaptability as an advertisement had not been required.

More than one hundred forty sketches were received from all sections of the country, and the quality of the work was, in general, excellent.

The jury felt that many of the drawings that could not be awarded prizes showed merit that should be recognized and that the more meritorious of these should be given mentions. Honorable Mention was given to the following: V. Bates, New York; Oliver M. Waird, New York; Catherine B. Heller, Ann Arbor, Mich.; E. O. Christensen, University of North Dakota, Grand Forks, N. D.; Eric H. Gibson, Chicago, Ill.

The jury consisted of Birch Burdette Long, Eugene Clute, Editor of Pencil Points, and E. L. Faber, Advertising Manager for Eberhard Faber.



WITH this issue we are beginning to put into the magazine more material of the kind that we believe is useful in the everyday work of the architect's office—drafting room information of practical value. In these articles and in those of a similar character which are to follow the men who prepare this material are making an effort to get right down to brass tacks, to make as concise and clear a statement as possible of the essential points and to supply practically all the data needed on the particular subject of which the article treats in each case.

From the time we started PENCIL POINTS we have wanted to supply more of this kind of reading than the limits of the magazine would permit. Now, with its growth we are able to expand a little in this direction without doing so at the expense of the other types of material of which PENCIL POINTS has been largely made up in the past and of which the readers have expressed general approval, namely: matters treating of the design side of architectural work, and of rendering and sketching; reproductions of plates from standard books useful in the drafting room and of examples of unusually good technique in rendering in pencil, watercolor, and other mediums; news items and portraits of interest to the field.

We are not departing from our established policy but are developing a part of it which we have had to hold in abeyance until now. In Mr. Van Pelt's articles for the past year, we have been presenting practical data about building materials and their use, from the standpoint of their æsthetic effect, combining the practical and the design side of the subject of architectural detail. In this issue we present the first installment of an article that will be made up of a mass of information on motion-picture theatre design, from the standpoint of satisfying the practical requirements in a way to accord with the latest practice. Mr. Mlinar in this article will pass along the data he has gathered from his unusually thorough experience in connection with architectural work on motion-picture theatres. How the various parts of such a building are designed to-day, why they are so designed, will be clearly stated; and the article will be packed full of useful data.

In this issue also will be found an article in which typical details of concrete-and-steel construction are presented with a brief statement of the important points of each detail. Mr. Seelye, consulting engineer, who prepared this article, has purposely kept

it elementary in character, and avoided going into details designed to meet the special conditions of some particular problem. We believe that presenting the typical details commonly used in this kind of construction, condensed in this manner, will prove a service to many of the younger men, particularly, and to students of architecture.

Mr. Gaertner this month, under the heading "The Specification Desk," gives a mass of data on swimming pool design. Details of a well-designed porch for a house of medium size are reproduced from a sheet of the architect's working drawings. The finished porch built from these drawings is shown by a small photograph.

Mr. Harbeson's article on "The Study of Architectural Design" is only temporarily discontinued, as it will begin appearing again at the end of the summer season. The installment of Mr. Valenti's article on "Perspective Drawing," which has been omitted from this issue, will appear in the next following issue.

We are endeavoring to make PENCIL POINTS even more attractive than in the past, to show more reproductions of fine pencil drawings, etc., while presenting more drafting room information from men who are especially well qualified by experience to get down to brass tacks on the subjects assigned to them.

ASSOCIATION OF COLLEGIATE SCHOOLS OF ARCHITECTURE

THE Ninth Annual Meeting of the Association of Collegiate Schools of Architecture will be held in Chicago, on Monday and Tuesday, June 5 and 6, 1922. The preliminary notice called for meetings on June 6 only, but in response to a call for more time, the program has been advanced to include June 5.

The meetings and headquarters of the association will be at the Chicago Beach Hotel, at East Fifty-first Street (Hyde Park Boulevard) and Lake Michigan. This hotel will also be headquarters for the Convention of the American Institute of Architects on June 7, 8, and 9.

While the meetings of the Association are open to all who are interested in architectural education, a special invitation is extended to schools of architecture to send representatives who will be accorded all the privileges of the floor in the discussion of educational problems.

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Detail of House for Allan Lehman, Esq., at Tarrytown, N. Y. John Russell Pope, Architect.

ARCHITECTURAL DETAIL PART XIV

BY JOHN VREDENBURGH VAN PELT

This is the fourteenth instalment of an article in which Mr. John Vredenburg Van Pelt, formerly Professor in Charge of the College of Architecture, Cornell University, Architecte Diplômé par le Gouvernement Français, and author of "Essentials of Composition," will discuss the designing of good architectural detail and point out the means by which the ability to produce good detail can be developed. Reproductions of detail drawings from some of the best architectural offices will accompany this article and the publication of this series of drawings will be continued after this discussion of the subject has been completed—making a valuable feature of this journal indefinitely.

IN AN earlier article of this series, we touched upon slate roofs, but the texture of this interesting material depends so much on a thorough knowledge of its technique that a detailed review is necessary in order to give any measurable grasp of the way the different effects may be obtained. In America the great supply of slate comes from Maine, the territory on the joint boundary of Vermont and New York, Pennsylvania, and a limited supply from California. The last is used only locally, I believe.

The colored slates practically all come from the Vermont-New York section and bear the name of the former state. Black slates are useful for certain types of roof and notably for commercial buildings. The Pennsylvania slates are prized for blackboards on account of their even texture. More beautiful roofs are made of the colored varieties and these divide into two groups, unfading and weathering. The unfading greens, reds, and purples make a cold roof so that it is considered good practice to mix with them a proportion of weathering slate and thus give warmth to the final effect. The principal colors are green, purple, variegated purple (mottled with greenish portions), grey, brown, yellow and red. Weathering

green often changes to brown and yellow and "sea-green" to a veritable rusted-iron color. The change takes place in six months if the roof is laid in the spring, in about a year if laid in the fall. It is important to use slate that will not disintegrate, split or break, but the better known brands are safe.

The original standard mixture of colors twenty years ago was unfading purple 80 per cent and unfading green 20 per cent. This is antiquated and all colors are now used together in certain kinds of

work. To determine the mixture is an art by itself as the proportion of weathering slate required to give the desired final color scheme brings into play knowledge of the slate that must be supplemented by real sensitiveness to color harmony. As may be surmised only a very few of those in the business possess this rare combination. It is of interest to remember that although the weathering slates change as above noted nearly all retain an underlying note of the original tone. Sea-green is the one that loses it to the greatest degree.

Even for commercial work the thinnest slates that may be used are $\frac{3}{16}$ of an inch thick. These should not be larger than 24 in. x 12 in. laid $10\frac{1}{2}$ in. to the weather. For a good class of work slate should not be less



*Detail of House for C. Bai Lihme, Esq., at Watch Hill, R. I.
Mott B. Schmidt, Architect.*

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Detail of House for Arthur Williams, Esq., Glen Head, L. I. Harris V. Hartman, Architect.

than $\frac{1}{4}$ in. The other extreme is two or two and a half inches for the heavy portions of the roughest graduated roofs.

In the roof each slate has three parts, the portion exposed "to the weather," the "middle lap" under the exposed part of the course above it, and the "head lap" covered by two slates. Slate roofs may be laid as flat as 25 degrees with a 3-inch head lap unless very rough. Below this pitch use a 4-inch head lap down to 22 degrees, and below this cement the covered portion of the joints and nail holes with slater's elastic cement or for very rough slate, bed the whole slate in slater's cement. Do not lay slate flatter than 14 degrees under any circumstances.

Although a 3-inch head lap may be specified, the roofer must be watched, as one manner of "skinning the job" is to reduce this to 2 inches.

A good illustration of a piece of heavy slate work is the John Dodge residence at Detroit, where the individual slates, one-half inch thick, are 40 inches long and laid $18\frac{1}{2}$ inches to the weather which leaves the proper 3-inch head lap. Of course in all cases the vertical joints in succeeding laps must be carefully broken or staggered.

Slate are usually laid on a boarded roof of $\frac{7}{8}$ -inch sheathing. For slate over $\frac{3}{4}$ -inch thick, $1\frac{1}{8}$ -inch sheathing ought to be substituted. They may be laid on $1\frac{1}{2}$ inch x $2\frac{1}{2}$ inch cleats but this would be impossible in a graduated roof. Fireproof work can be carried out with steel angles, wiring the slate instead of nailing. On concrete, strips may be bedded in the slab or for graduated roofs one inch of nail-code may be placed on the concrete or sawdust concrete may be used for the slab. Gypsum slabs may also be utilized for such work.

Nails should be solid copper, copper-clad only for commercial or the cheaper grade of work. The rule for nail lengths to hold slate up to $\frac{3}{4}$ -inch is twice the thickness of the slate plus one inch. Add $1\frac{1}{4}$ inch to the double thickness for heavier slate and $1\frac{1}{2}$ inch if the slate are very rough or uneven. In valleys or where the slates do not lie flat on each other real spikes come into play.

Curved or "weaved" valleys are measured by the length of the chord or "segment" of the arc of the circle between the two points where the straight portions of the sheathing stop. Actually the sheathing is run straight on to the mitre of the valley so this segment is the width of the wood or other filling that is placed on top of it in the valley. On wood sheathing a series of blocking, wood plank cut in an angle to fit the mitred sheathing and with a concave curve to fit the sweep or weaving curve of the slate, support a number of narrow flooring strips that run up the valley. Such valleys may begin at a point at the top and broaden out to a curve at the bottom or for certain effects may have the point at the eaves and run to a broad curve at the top as in certain dormers where the ridge of the dormer itself curves back into the roof or as in the charming Gate Lodge by Griffin & Wynkoop, for the F. N. Potter estate, see page 13, where the intersection of the cornices requires a right angle at the eaves. The last, an English style, can also be seen in restrained form in the full-page illustration on page 10, of the beautiful roof of the Allan Lehman house designed by John Russell Pope. The valleys of the dormers of the Arthur Williams house, page 12, have the same sweep all the way up and the result is broadly curved eaves dying into the

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main roof. Segments are not usually made sharper than six inches, as below this the slate can be bridged across and thirty inches is about the maximum.

There are three kinds of valleys, the open valley, the closed mitred valley, and the sweep. Open valleys are a practical solution, a flashing about 20 inches wide (7 inches under the slate on each side) being run straight up the roof. But they are ugly, a gash, a foreign material that cuts up through the slate mass. Closed, mitred valleys should have strips of "shingle" or "blind" flashing set into each course. A woven valley can be made without flashing but it is at least safe to cement it carefully with elastic cement. Copper, 16 oz., is the most common flashing material in high-grade work. Where sheet lead is used, 4 lb. is a good weight. Zinc is another excellent material for this purpose. Long lines of lead laid up a roof will "crawl" in time or become thick at the bottom and correspondingly thin at the top, turning the upper nail holes into slots. This is obviated by resorting to shorter pieces of lead, lapped. If hard lead is used, it is said, that it may be employed in long continuous strips without "crawling." In hard lead the weight most often employed is 2 lb. The choice of one or another of these materials depends on the special conditions including cost. In "blind" flashing each strip should be large enough to extend from a point just above the bottom edge of the slate it is under, up to the upper edge of the

slate it covers. This means that it will be as high as the number of inches the slates are to the weather plus the 3-inch or 4-inch head lap. Another point that will bear watching is the tendency of contractors to substitute cementing for metal flashing that has been specified. As a matter of fact, in hips and ridges, careful cementing and mitring may safely be required in place of metal flashing.

There are three kinds of hips and ridges, the ridge roll or metal ridge or hip, the Boston hip, and the mitred hip or ridge. The first presents the same objection as the open valley, a noticeable obtrusion of an extraneous material. See the dormer of the C. Bai Lihme house on page 11. Here an avoidance of mechanical smoothness of the metal saves the appearance. The second is in general disfavor among slate lovers and experts. It is clumsy and the saddle of slate really offers little advantage as each piece must be nailed on and the nails cemented. Furthermore the holes do not correspond with the lining-up of the main roof slate. The mitred ridge or hip is made by bringing two thicknesses of slate on each side of the roof up to the top, first the lower layer on one side, then that on the other to the top of the first, then the second layer of the first side to the top of the first layer of the second side, then the second layer of the second side to the top of the second layer of the first side.

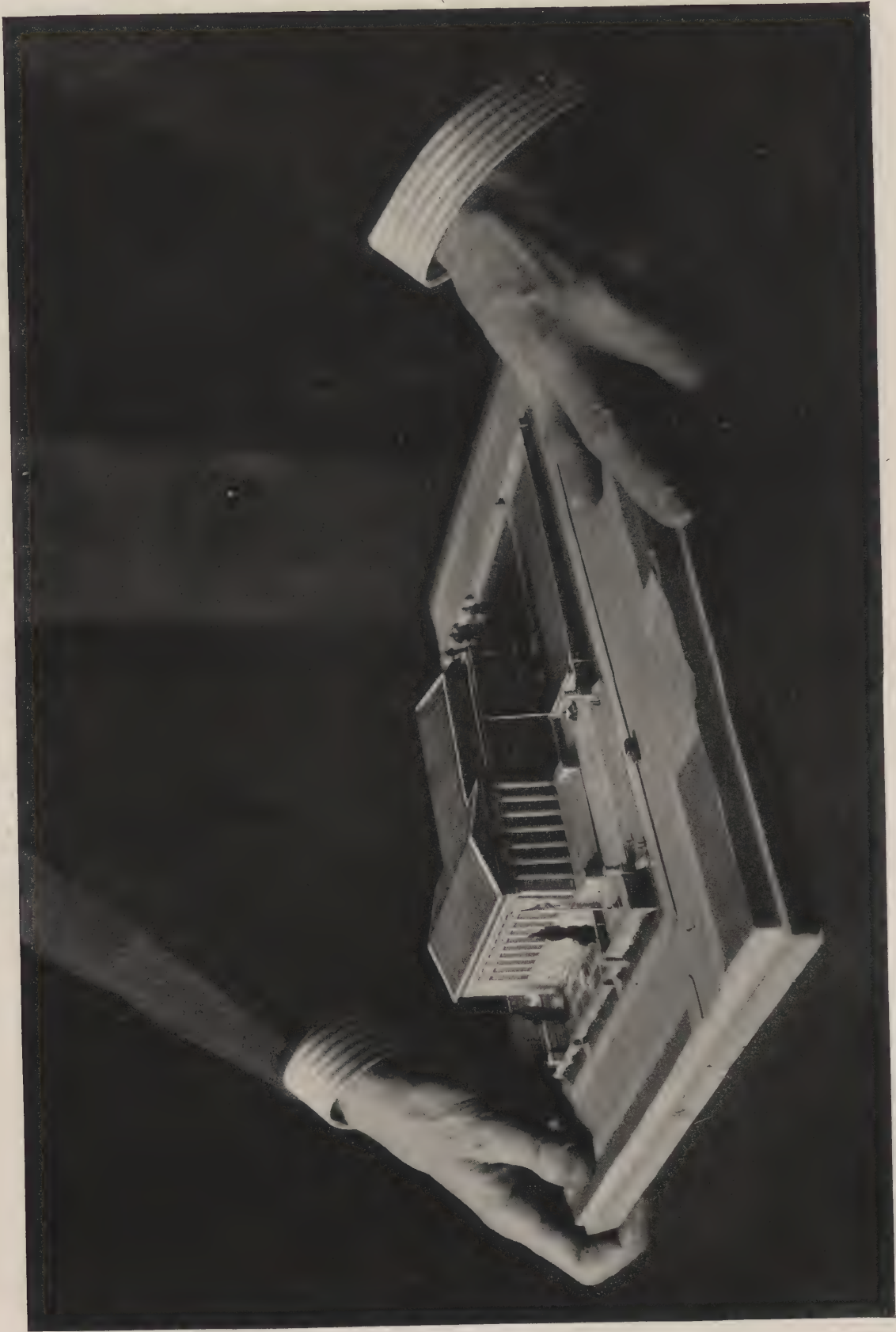
(Continued on page 36)



Gate Lodge for F. N. Potter, Esq., at Rome, N. Y.

Griffin & Wynkoop, Architects.

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Photograph of Cardboard Model of Proposed Henry Stambaugh Memorial Auditorium, Youngstown, Ohio. Helmle & Corbett, Architects. This Photograph Shows the Small Size of the Model Compared with a Man. This is the Model Which Was Used in Making the Composite Photographs Shown on Page Ten of the April Issue of this Journal

ARCHITECTURAL MODELS OF CARDBOARD, PART III

BY HARVEY W. CORBETT

This is the third installment of an article in which Mr. Harvey W. Corbett of the firm of Helmle & Corbett, Architects, New York, will tell exactly how he makes cardboard models of buildings; how he uses them for study in the process of designing and as a means of presentation. Mr. Corbett will go into the most minute details of the making of these models and will illustrate his descriptions with photographs showing the tools used and the various operations. There will also be numerous interesting photographs of models and of details of models. The making of landscape features, trees, hedges, lawns and other parts of the entourage will be described, also such incidentals as automobiles and figures.—Ed.

THOUGH the working of cardboard may seem a simple matter—and it is indeed simple—there are things about it that can give one a deal of trouble and can prevent the resulting model from possessing the accuracy and good workmanship that a model must have if it is to be of use either as a means of studying or of presenting the design for a building.

Models such as the one shown in the illustration on the opposite page are made almost entirely of mounted watercolor paper. In fact, the models illustrated in connection with the installments of this article in the April and May issues and all my other models are made from this material, with certain parts and accessories of other materials.

The cardboard must be cut accurately with true, clean edges, and I have found that the most satisfactory way to go about this is to make a preliminary or guiding cut in the face of the material with a keen blade that is sufficiently heavy to be firm and rigid. For this purpose, I use a knife that has a blade about

nine inches long, with a handle secured to the middle by means of screws. The hardware store clerk who sold it to me said that it is intended for cutting cloth and he called it a shirt cutter's knife. I keep it sharp by grinding it on a small carborundum wheel and honing it on an oil stone. There is enough of it so that I need not hesitate to grind it as often as necessary. The handle can be slid back along the blade by loosening screws at the side and clamped in a new place by tightening them. It is not necessary to have this kind of knife, the large blade of a heavy pocket knife will do. However, the knife described has the advantage of greater firmness and steadiness because of its rigidity and weight. It will last longer under frequent grindings. Also it is of an unusually fine grade of steel and takes a remarkably keen edge.

The use of this knife is shown in the photograph Figure 1 on this page. In this illustration it will be noted that I am cutting along a steel square, which I find a very convenient tool. One cannot use a wooden square or wooden straightedge because the knife

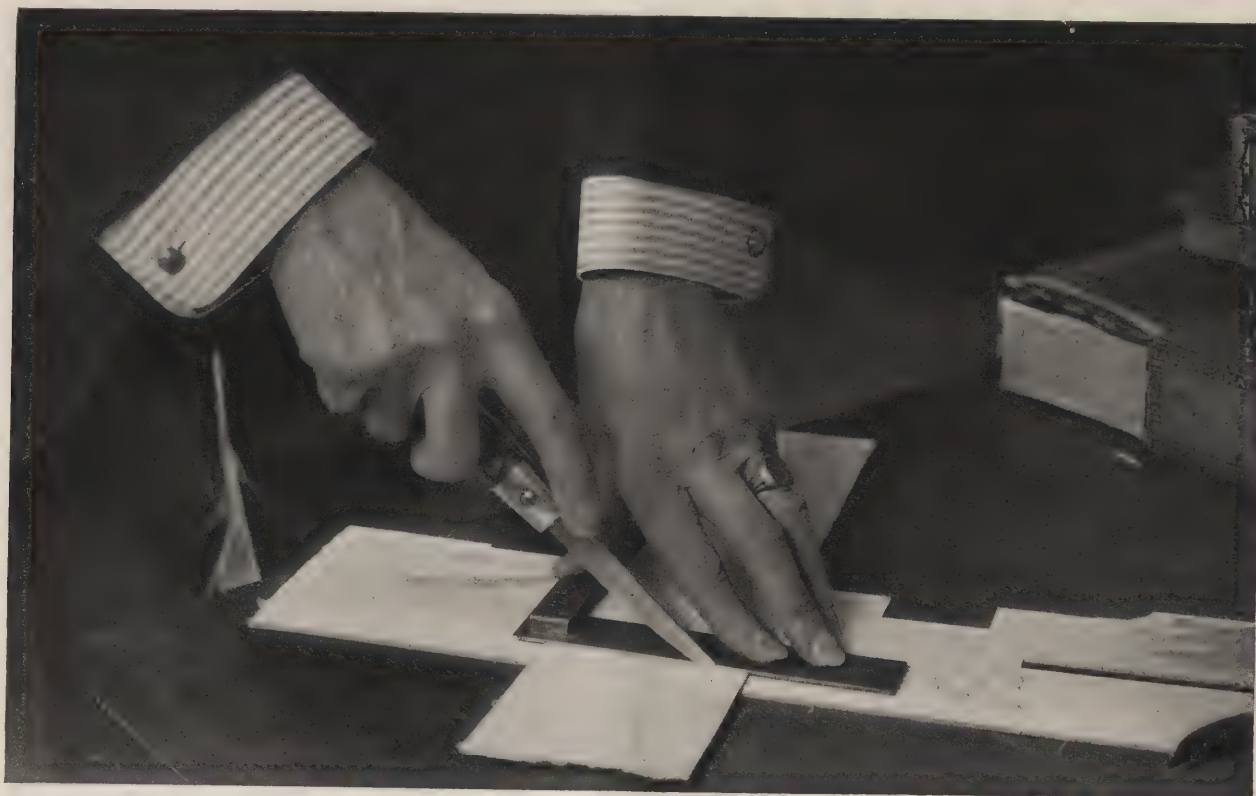


Figure 1. Making the Preliminary or Guiding Cut on the Face of the Cardboard with a Sharp, Heavy Blade.

PENCIL POINTS

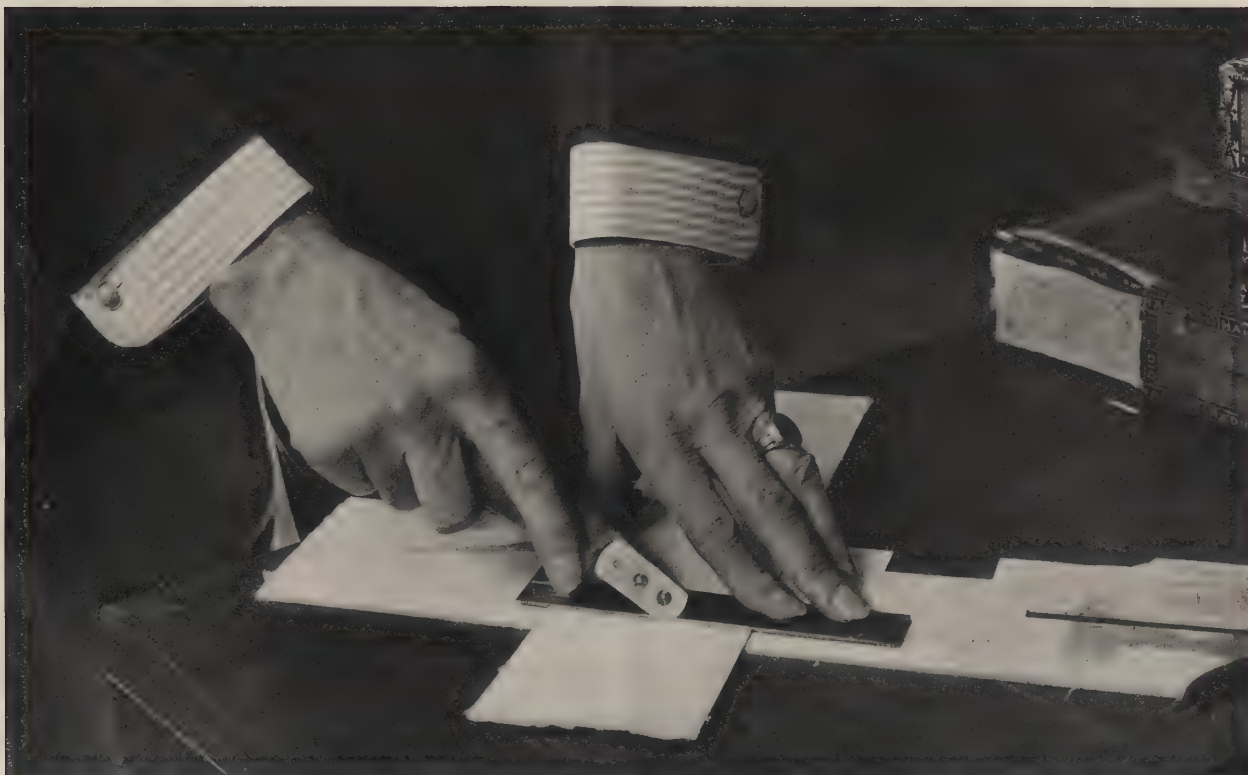


Figure 2. Cutting with Razor Blade Mounted on Wooden Handle. A Succession of Light Strokes is Used.

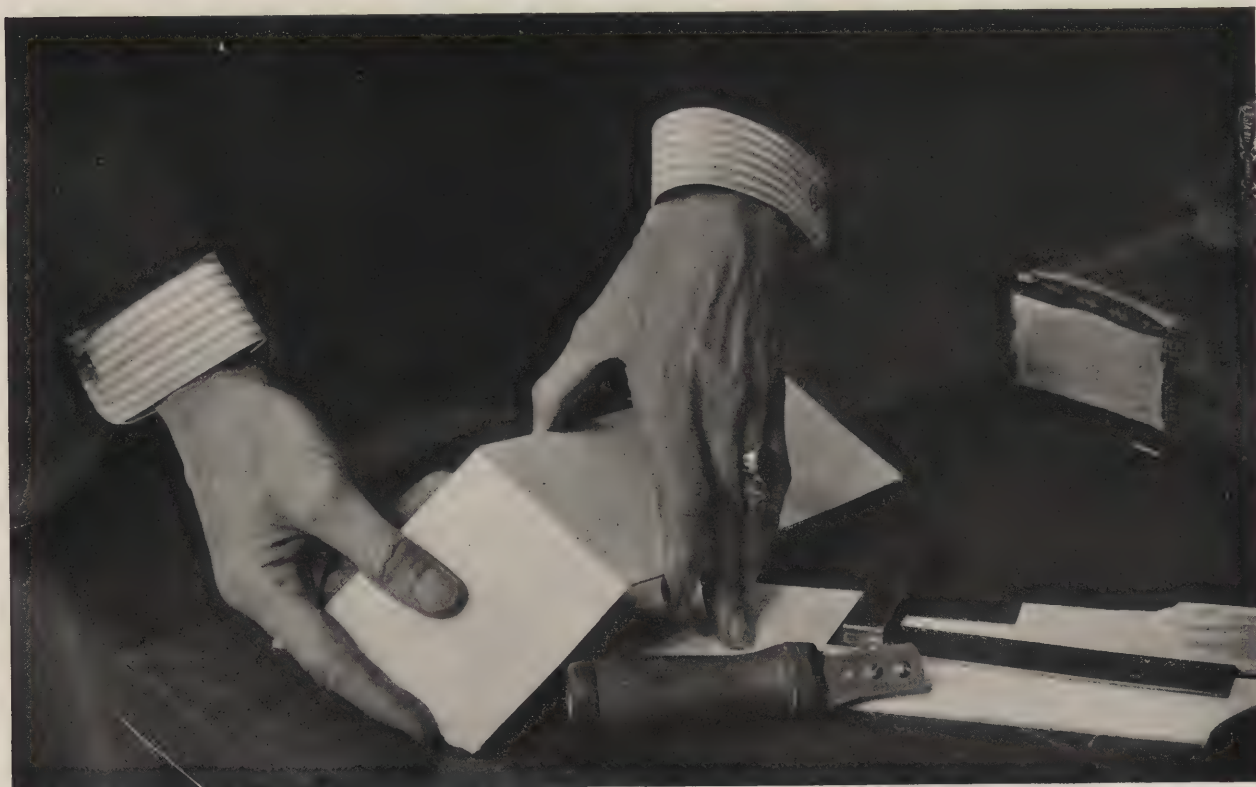


Figure 3.—A True, Clean Cut Is the Result of This Method.

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would cut it and the steel square should not be graduated, as a perfectly smooth true edge is needed. The cut made with this knife should be shallow—the purpose is only to prepare the way for the razor blade which will be used to do the actual cutting through the cardboard. I have found that without this preliminary cutting the razor blade bends and makes a wavy line.

In Figure 2, on the upper half of page 16, is shown the process of cutting. The tool is one I made by sawing a chisel handle and attaching a safety-razor blade to it by means of screws. This razor is drawn along the shallow cut already made by the heavier knife. One must not bear down on the razor, but draw it smoothly and lightly along the line repeatedly, with just enough firmness so that it will bite into the cardboard. It will eat its way rapidly downward. In Figure 2 it will be seen that I have laid the cardboard to be cut on top of a piece of similar cardboard in such a way that one end projects. The weight of the projecting end tends to open the cut, preventing the cardboard from pinching the blade.

The result of this method is a clean, true cut, as shown in Figure 3, where the card is seen bent so that the cut opens. This photograph also gives a better view of the cutting tool used. There must be sufficient flat surface back of the blade to keep it firm but the wood of the handle must be cut away enough to allow the corner of the blade with which the cutting is done to project at least as much as the thickness of the cardboard.

In forming the body of a model it is best to make the four walls from a single piece of cardboard, cutting V-shaped grooves in the back of the card and bending it at the corners of the building. This produces much neater corners than it is possible to make by mitering separate pieces and it is easier in the end. The method by which I form these corners is shown in Figures 4, 5 and 6. For the sake of clearness, the dimensions are exaggerated in these diagrams, the mounted watercolor paper being shown at four times its actual thickness. The corners having been marked on the face of the cardboard, a blunted V-shaped section, shown in Figure 4, is cut from the back of the board directly opposite by making two knife cuts at an angle of 45° , and lifting out the part between them with the point of a knife.

This leaves a small amount of material, as shown in Figure 5, to be removed with a rat-tail file or a small saw, working carefully until the back of the watercolor paper is reached. The cardboard should be held to the light from time to time to note the progress of the work.

The next step is to score the paper surface of the cardboard lightly along the line of the corner. Unless one does this the corner will be rounding instead of angular and more or less wavy instead of straight. The small blade of a pen-knife, not too sharp, serves well for scoring the paper.

Next, each section of the board must be backed with board of the same kind used in the reverse sense, that is, back to back, so that atmospheric changes will affect both sides alike and the board will not warp. This backing is glued on and the work kept under pressure till the glue is dry. I use an old-fashioned screw letter press for this purpose.

A corner formed in this way is shown in Figure 6, the white space between the double lines represents the watercolor paper, the dotted portion, the mounting board, and the black parts represent the glue.

Of course, one of the four corners must be made by mitering, but usually it can be hidden by some other part of the building. The four sides joined in this way are then glued down upon another piece of cardboard and a rectangle of cardboard cut to fit snugly inside is glued down in the bottom to stiffen the lower part. The roof section when in place will stiffen the top. Though

the body of a model is not always a simple rectangle, it is possible to apply this general principle, with necessary variations, in the construction of all models.

A word in regard to the use of glue will not be amiss, I think. I use prepared fish glue. I buy it in the small, wide-mouth bottles. I used to get it in the larger containers but have found it better to get small bottles, for then it does not dry out before I have used it up. Perhaps it is only a fancy, but the glue in the smaller bottles seems to me to be of a better quality. There is another reason for buying the glue in this form—a small metal spreader comes with each small bottle and one can never have too many of these spreaders. I have quite a collection of them. When I am using the glue I have a bowl of water at hand, also a towel. As fast as I use a spreader I drop it into the water and take up one that has been soaking, and wipe it dry on the towel. The bowl of water and the towel make it possible to free the fingers from glue at frequent intervals. This is important, for if glue gets on the paper surface it will catch dust and cause a dark spot, and it cannot be removed without injuring the rendering. If the fingers are moist (not wet, or even damp) I find that the glue does not adhere to them so tenaciously as when they are perfectly dry.

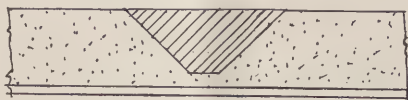


Figure 4.



Figure 5.

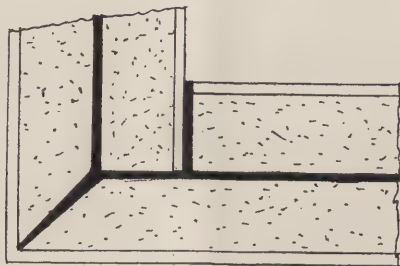


Figure 6.

*Forming a Corner. Diagrams
Four Times Actual Size.*

A VOCABULARY OF ATELIER FRENCH. PART III

BY RAYMOND M. HOOD

This is the third installment of a vocabulary which Mr. Hood, Architecte Diplômé par le Gouvernement Français and Chairman of the Committee on Architecture of The Beaux-Arts Institute of Design, is preparing especially for this journal. It will be of special value to students in the ateliers in this country as well as to those who may later study at the Ecole des Beaux Arts in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier. As it is believed that an attempt to indicate the pronunciation would be futile, no such attempt is being made here; the pronunciation should be learned from someone who speaks French correctly.—ED.

D (Continued)

- Décimètre: *n. m.*; a tenth of a metre, a scale or ruler of that length.
 Devis: *n. m.*; *arch.*, specifications.
 Diplôme: *n. m.*; diploma.
 Diplômé: *n. m.*, and *adj.*; one who has received a diploma.
 Dôme: *n. m.*; dome.
 Double-décimètre: *n. m.*; the architectural and engineering scale in ordinary use, being twenty centimetres long.
 Doubleau: *n. m.*; (a) one of the heavy beams in floor construction; (b) an arch ring.

E

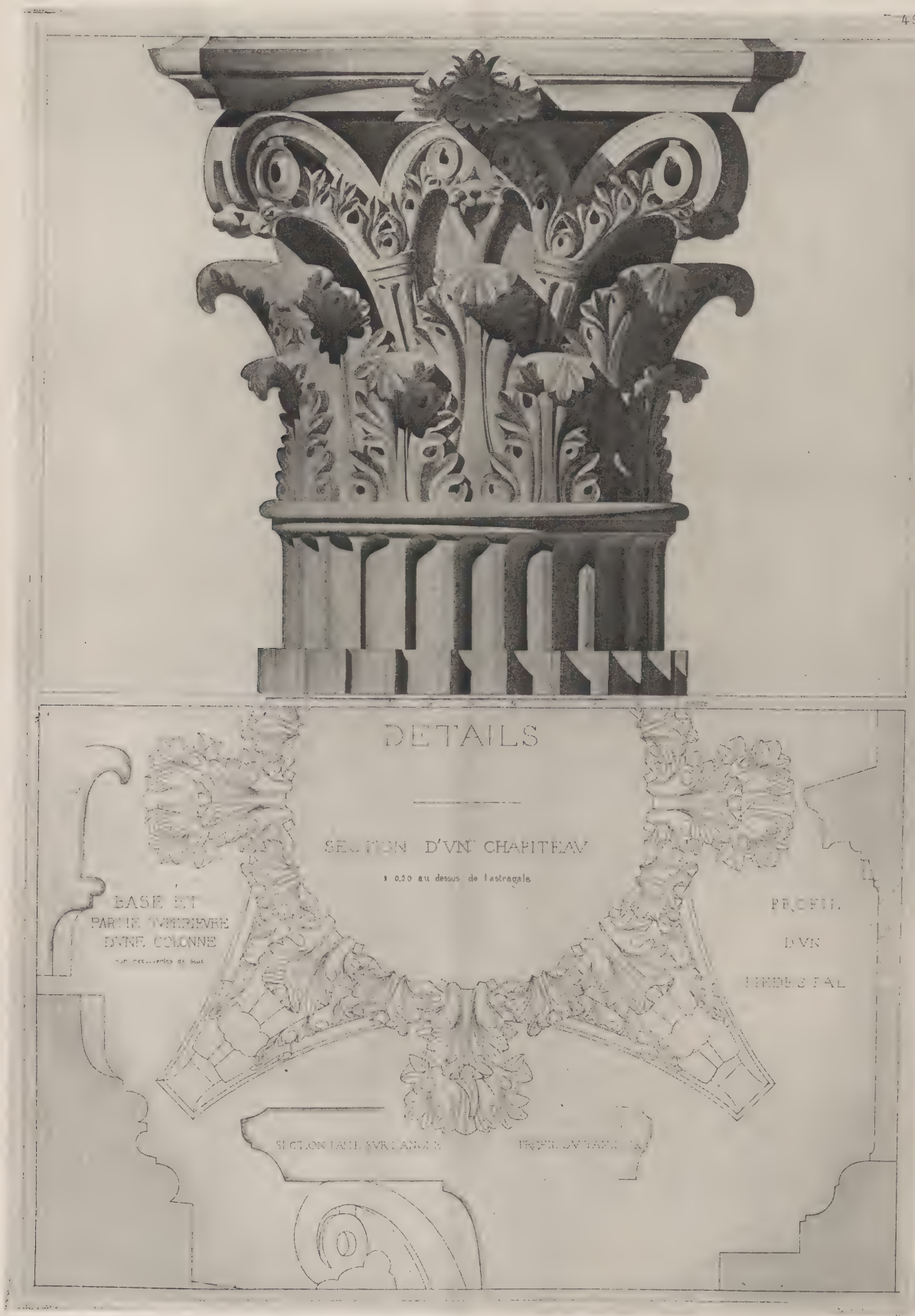
- Ebauche: *n. f.*; a first sketch, or a roughing out of an idea.
 Ecarté: *n. m.*; a game of cards, played usually by two, occasionally by three or four.
 Echaufaudage: *n. m.*; a scaffold.
 Echappé: *n. m.*; a queer person, a lunatic; (literally, a person who has escaped).
 Echelle: *n. f.*; (a) a ladder; (b) *arch.*, scale, as of a drawing.
 Ecole: *n. f.*; school.
 Emballer: *v.*; to do up, to box up; *s' emballer*; to be carried away by anger or enthusiasm.
 Emballé: *n. m.*; an enthusiastic person.
 Embêter: *v.*; to vex or annoy.
 Embêtant: *adj.*; annoying, vexing.
 Encre: *n. f.*; ink; *encre à poncer*, a special ink used for a drawing that is to be transferred by rubbing.
 Engueulade: *v. f.*; *slang*, a balling out.
 Engueuler: *v.*; *slang*, to ball out, to call down.
 Enorme: *adj.*; enormous; *slang*, wonderful, extraordinary, interesting.
 Entablement: *n. m.*; the projecting part of the cornice above the frieze.
 Entourage: *n. m.*; environment, followers; *arch.*, the grounds immediately surrounding a building.
 Entresol: *n. m.*; the mezzanine story between the ground floor and the first floor.
 Envoi: *n. m.*; the action of sending, the thing sent; *arch.*, a drawing made by a scholarship student to be sent to his masters.
 Epure: *n. f.*; *arch.*, a diagrammatic drawing of an architectural problem, as the "épure" of a vault, or a truss.

Note.—We take this opportunity to correct typographical errors in the installment of this vocabulary which appeared in the May number as follows: Charette—not "charrette"; chef-cochon—not "chef-cochur"; costaud—not "costand."—ED.

- Esquisse: *n. f.*; a sketch.
 Esquisse-esquisse: *n. f.*; a rough sketch, applied in the Ecole des Beaux Arts to the twelve-hour sketches.
 Etranger: *n. m.*; a foreigner, a stranger.
 Etude: *n. f.*; a study, a research.
 Etudiant: *n. m.*; a student.
 Etudier: *v.*; to study, to examine.
 Evêque: *n. m.*; a bishop; slang of the Café des Deux Magots, a Manhattan cocktail.
 Examen: *n. m.*; examination.
 Exèdre: *n. f.*; an exedra.
 Exposer: *v.*; to exhibit, to put on view.
 Extrados: *n. m.*; exterior surface of a vault or arch.

F

- Façade: *n. f.*; facade.
 Faculté: *n. f.*; (a) faculty; (b) a department of a university, or a group of professors forming a department.
 Faîtage: *n. m.*; the piece of wood or iron forming the ridge.
 Fauteuil: *n. m.*; an arm chair; *arriver dans un fauteuil*, to finish easily.
 Fenêtre: *n. f.*; a window.
 Fer: *n. m.*; steel; *arch.*, a piece of steel, i.e., a column or a beam.
 Ferme: *n. f.*; a truss.
 Ficher: *v.*; to force to enter by the point; *se ficher de*, to make fun of, to have no regard for; *ficher à la porte*, to throw out.
 Fichu: *adj.*; poor, badly done; *slang*, lost, ruined.
 Filer: *v.*; to thread; *of a lamp*, to smoke; *slang*, to go away, to go rapidly.
 Filon: *n. m.*; a clever robber.
 Fiston: *n. m.*; *slang*, a son.
 Fixatif: *n. m.*; fixative.
 Flaner: *v.*; to loaf.
 Flaneur: *n. m.*; a loafer.
 Flanquer: *v.*; to throw, to place; *flanquer à la porte*, to throw out.
 Flèche: *n. f.*; (a) an arrow; (b) the spire of a church.
 Flémard: *n. m.*; a lazy, stolid person.
 Flème: *n. f.*; *slang*, the desire to do nothing, stolidity, laziness.
 Foncer: *v.*; (a) to dig down; (b) to darken or make deeper in value or color.
 Fou: *n.* and *adj.*; crazy, idiotic.
 Four: *n. m.*; an oven; *slang*, a failure.
 Foyer: *n. m.*; (a) home, hearth side; (b) the part of the theatre where the public congregates during the entre-actes; (c) the focus of an ellipse.
 To Be Continued.



DETAILS OF THE TEMPLE OF MINERVA AT ASSISI.
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

The restoration by Louis Bernier reproduced on the other side of this sheet shows interesting detail of the Templé of Minerva at Assisi. It may be noted that in this building the columns were just over fifteen meters in height and that the intercolumniation is just under four and one-half meters from axis to axis of the columns. The entablature was light for the order, being only about one-fifth the height of the column.



RENDERING IN PENCIL AND WATER COLOR.
AN INTERIOR IN THE GEORGIAN MANNER. THEO. HOFSTÄTTER & CO., DECORATORS.

The rendering of an interior shown on the other side of this sheet is an example of the effective presentation of a scheme of decoration and furnishing for the purpose of making the proposed treatment clear to the client. It is drawn in pencil and rendered with washes of watercolor, the pencil work serving to give the detail and the watercolor to suggest the color scheme.



PENCIL SKETCH, CARMONA, BY AUSTIN WHITTLESEY.

Bridging across a cleft between two hills in the centre of the town of Carmona, in Spain, is the old Moorish citadel, under which passes the street shown in the admirable drawing by Austin Whittlesey reproduced on the other side of this sheet.

PENCIL POINTS

VOL. III, No. 6

PLATE XXIV



Courtesy of Kennedy & Co.

PENCIL STUDY FOR A DECORATION BY TROY KINNEY

The pencil drawing by Troy Kinney reproduced on the other side of this sheet, at the same size as the original, is one of the artist's studies for the figures in his mural decorations in the Miss Louise Le Gai School of the Dance in Philadelphia. These decorations consist of two paintings each about nine feet square. One represents the early development of the dance, the dance of Classic times, while the other represents the later development, typified by a dance characteristic of the French court in the Eighteenth Century. The study which is reproduced here is for one of the figures in the Classic panel. Each of these paintings shows a group of three or four dancing figures. Both panels are painted in light, soft tones like those seen in old tapestries.

ELEMENTS OF CONCRETE AND STEEL CONSTRUCTION

BY ELWYN E. SEELYE

In this article Mr. Seelye, C. E., Consulting Engineer, Member of the American Society of Civil Engineers, American Concrete Institute, and the Society of Terminal Engineers, presents the principal typical details of the method of construction treated and points out the more important structural points in each case. Mr. Seelye acts in the capacity of consulting engineer to architects on structural work, and has won recognition, particularly in the progressive use of steel and concrete in combination.—ED.

IN THE diagrams shown here are represented typical details of concrete-and-steel construction and the following notes briefly indicate the more important points in relation to each detail.

Figures 1 and 2. There are some essential elements of strength in the lintels shown in Figures 1 and 2, which should be pointed out as follows: There should be reinforcement in the bottom of concrete lintels and of tile lintels filled with concrete. Shelf-angles to carry face brick on wide-span lintels should be anchored to the concrete. As shelf-angles cannot be easily anchored to tile lintels the angle should be of such a size as to carry the face brick below the bond course. The five-cell tile shown is a stock window-head section which permits bonding the face brick to the tile and also relieves the load of the face brick on the shelf angle. Note that in all these sections, excepting those for interior walls, an offset for weathering at the window-head is provided. To meet this requirement in the case of a tile wall without face brick another stock block is provided. Where fireproofing is called for in steel lintels they should be wrapped with mesh to reinforce the concrete or cement plaster which forms the fireproofing.

Figure 3. There are two general methods of supporting cornices. One is by means of anchor bolts and the other on outriggers. The outrigger generally fulcrums on the wall and is held down by being con-

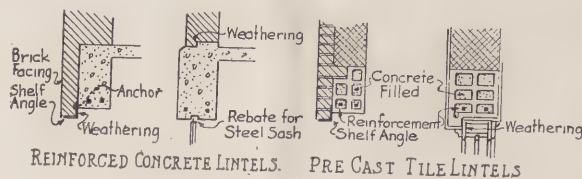


Figure 1.

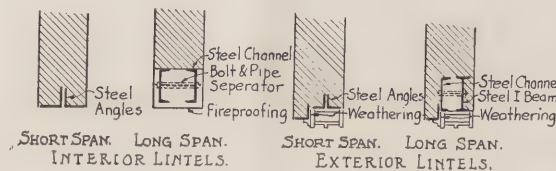


Figure 2.

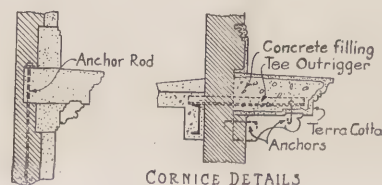


Figure 3.

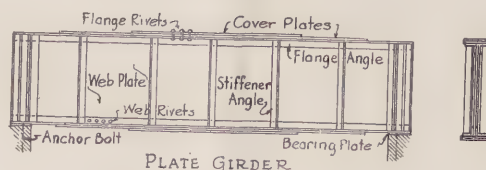


Figure 4.

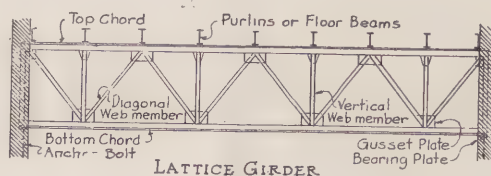


Figure 5.

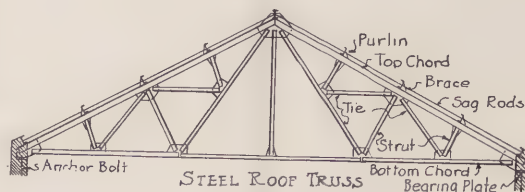


Figure 6.

nected to the steel framing as shown in the section. The anchor bolts should never be used without first determining whether there is a possibility of the wall overturning at the point below the bottom of the anchor bolt shown in left-hand diagram in Figure 3.

Figure 4. The plate girder depends for its strength not only on proper sizes of its component parts such as web plates, cover plates, and flange angles, but upon a proper spacing of the web rivets and flange rivets. These rivets make the component parts act together as a unit and the stresses in them should be carefully analyzed so that the rivets may be proportioned in accordance with the work they have to do. Attention is also called to the importance of bearing plates and anchor bolts where plate girders rest upon walls.

Figure 5. Here is shown a lattice girder and attention is called to the fact that purlins should be placed over panel points and that all members should be connected with gussets with the proper number of rivets to develop the stress in the different members.

Figure 6 shows a typical steel roof truss. Attention is called to the necessity of sag rods for the purlins, braces for the purlins, anchor bolts, bearing plates and gussets with proper rivetting.

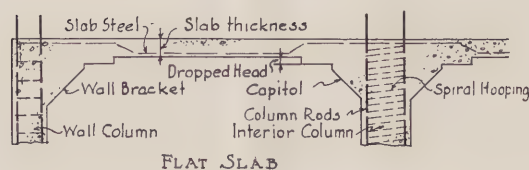
In Figure 7 is shown a section through typical reinforced concrete flat slab construction. This construction being of cantilever type requires steel to be bent up over column

PENCIL POINTS

heads and wall brackets. Steel at wall brackets should be hooked down. Column steel in this construction should be carried up into the column above. The interior columns are generally round or octagonal and reinforced with spiral hooping, whereas the wall columns are generally rectangular and reinforced with individual hoops.

Figure 8 indicates a fireproofed steel floor and a metal lumber floor. Note particularly that the fireproofed steel floor requires soffit reinforcement for the fireproofing and that the mesh reinforcement for the slab should be bent up over supports. At an end support it should be hooked around the I-beam. In the case of the metal lumber floor, metal lath for the floor should be of deep-ribbed type with stone concrete on top of it. The metal lath for ceiling should be a rib lath. It is preferable to use bridging on this type of work and special strength should be provided under partitions. The construction shown may be varied so as to permit the use of wood sleepers laid directly on top of the metal lumber for the purpose of nailing a wood floor to same.

Figure 9 represents typical beam and slab reinforced concrete construction. It is to be noted that where a beam or a slab passes over a support, reinforcement in the top must be provided to prevent the occurrence of reverse bending cracks. This top reinforcement may be provided in the case of beams either by bending up part of the bottom steel from each side and lapping it, or by the use of short straight rods which are sometimes called floating rods. The stirrups should be accurately spaced and wired in place in accordance with the detail plans. In the case of the slab steel, all rods are usu-



FLAT SLAB

Figure 7.

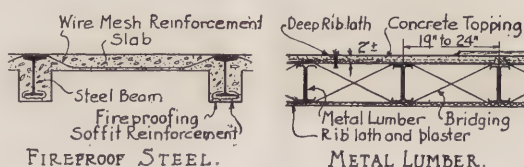


Figure 8.

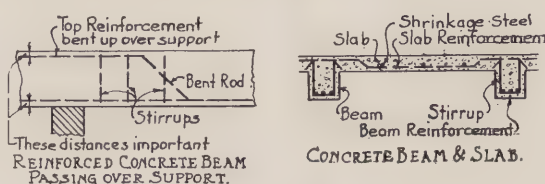
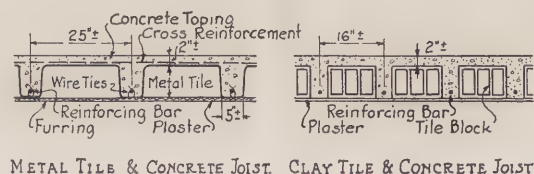


Figure 9.



METAL TILE & CONCRETE JOIST. CLAY TILE & CONCRETE JOIST.

Figure 10.

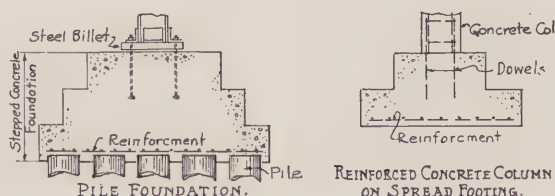
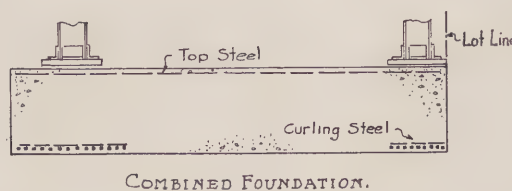


Figure 11.



COMBINED FOUNDATION.

Figure 12.

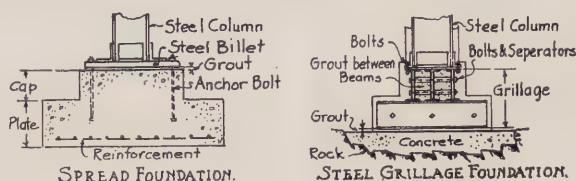


Figure 13.

ally bent up over supports. It is important to provide spacers to keep the bottom steel up a fixed amount above the forms in accordance with the detail plans. In the same way the top steel should be held up on chairs or other devices and all should be rigidly wired so that it will not become displaced during spading. Accurate spacing of reinforcing steel is an extremely important matter and should receive careful attention by the architect in the field.

Figure 10 indicates two types of reinforced concrete cored floors. The first shows what is commonly known as the metal tile and joist and important features to look out for here are the placing of galvanized wire ties to hold the metal lath ceiling in place, the use of cross reinforcement, and the proper spacing and alignment of the metal tile. In the case of the clay tile floor, proper spacing and alignment of the blocks is important and in both cases care should be taken to see that the bottom steel is held rigidly in place and not allowed to drop too far down or to become placed too high in the joist.

Figures 11, 12 and 13 illustrate common types of footing. It is to be noted that in the ordinary footing which is not joined to another column, the reinforcement is placed in the bottom, whereas in the combined foundation the main steel is placed in the top and transverse steel, sometimes called "curling steel," is placed in the bottom to prevent the earth pressure from curling the footing about its long axis. In the case of a concrete column, dowels are required to be cast in the footing. In the case of the steel column, anchor bolts are required to connect the steel column to

(Continued on page 36)

MOTION PICTURE THEATRE DATA

BY EMIL M. MLINAR.

In this series of articles Mr. Mlinar, who is the New York associate of C. Howard Crane, Architect, Detroit, Michigan, will go thoroughly into the practical considerations in motion-picture theatre design, presenting the data indispensable in designing and making drawings for such theatres. Mr. Mlinar specializes in theatre work and was formerly of the office of Thomas W. Lamb.—Ed.

THE practical requirements that govern the size and arrangement of the various parts of a motion-picture theatre and the nature of its equipment are so special in character and such great advances have been made in this field during the past few years that a concise statement embodying the data required in designing such buildings should, it seems, serve a useful purpose. With this thought in mind, I shall endeavor to present in the course of these articles the considerations and facts that I have found must be taken into account if a motion-picture theatre is to prove satisfactory to the public that uses it, to the owners whose money is invested in it, and to the neighborhood of which it forms one of the architectural features.

It is my practice to prepare the program in each case from the information recorded in the answers to a questionnaire which I present in printed form to be filled out in consultation with the client. This questionnaire serves as a reminder of all the points that should be covered in the program.

The first consideration that requires the attention of the architect, naturally, is the site, including the character of the neighborhood in which the motion-picture house is to be built, for upon its suitability to the locality the success of the design depends very largely. Not only should the building provide the right kind of accommodations for the right number of people, but it should be so planned and of such design character that it will serve its purpose and be an attractive addition to the street architecture of the section for at least a period of ten years after it is built, for this is the period most often arranged for the amortization of the loans that are usually required in financing the building operation. I do not hesitate to say, as the result of my own observation, that the value of a well-arranged and beautiful interior in attracting and holding patrons for a theatre can hardly be over-estimated.

The planning of the entrance is of great importance, both from the standpoint of providing ample and well-arranged facilities for handling the crowd and for the display of advertising and other features that attract people to the theatre. In the case of the smaller theatre, say, up to a capacity of two thousand two hundred seats, the entrance consists of an entrance vestibule and lobby. In the larger theatre the entrance consists usually of an entrance vestibule, outer lobby and grand foyer.

Ordinances in some cities define the minimum width of the lobby at twenty-five feet in the clear of exits, or five pairs of doors five feet in the clear or five feet six inches between jambs each. Where such a law is in force, the lobbies are usually very spacious and in addition to serving their primary purpose as a means of entering and leaving the

theatre, their spaciousness makes them attractive and affords opportunities for the effective placing of advertising.

I shall first endeavor to point out the main facts governing the design of the entrance vestibule, the outer lobby and the grand foyer in a theatre of the larger type, assuming that the theatre is of a capacity over two thousand two hundred seats.

The vestibule, as is the case in any other public building, should be attractive, and the vestibule of a motion-picture theatre should have selling power. Not infrequently vestibules are made very shallow and this is a great mistake. In the first place, it means a failure to provide proper space for handling the crowds going in and out of the theatre. In the second place, it fails to attract passersby into the theatre. In the third place, it does not provide the necessary wall surface for advertising the performances. When possible, the vestibule should be at least fifteen feet deep, measuring back from the building line. This gives ample room for the building of the ticket booth which, in itself, is an important feature. As a basis for estimating the size and number of ticket booths, one must keep in mind that such a booth should contain space enough for two ticket sellers for a theatre having a capacity up to two thousand five hundred people, and for three ticket sellers for a theatre where the capacity is above this number, excepting where there are interior booths opening upon the lobby to serve for the advance sale of tickets. If this rule is followed in providing facilities for the public to purchase tickets, there will be no crowding. Personally, I feel that an inside ticket office is of no particular value as the tendency of people is to follow the crowd, and the crowd will be found, naturally, in line for the ticket booths at the front of the lobby. Where there is an inside ticket office in addition to the ticket booth at the front, there is, naturally, confusion and annoyance caused by people who are endeavoring to reach the inside ticket office by breaking through lines formed for the outside ticket booths.

In figuring the size of ticket booths, one should allow at least six square feet per person in the booth. This figure is based on the assumption that during the rush hours the ticket sellers are standing and that at other times only one ticket seller is likely to be on duty. The other requirements of the ticket booths include provision of the necessary space for the electrically-operated ticket selling machines, which require a space of approximately twelve by twenty-four inches each; also space for the money tills and for the ticket reels.

The vestibule should be brightly lighted and as a help toward this end the marquee, with its rows of electric bulbs, is important. I shall describe fully

PENCIL POINTS

the marquee in later installments of this article when dealing with electric wiring in connection with the theatre.

Provision for effectively displaying the advertising must not be overlooked or slighted, for, as we have already pointed out, one of the functions of the entrance is to attract people to the theatre.

In providing space for frames in which the advertising is to be displayed, it is well to consider the best practice in the use of such advertising in order that the requirements in this respect may be met. In a large motion-picture theatre the best display of advertising often consists of two three-sheet posters in frames in the lobby, one on the wall at either side, also small frames on the jambs of the entrance piers for photographs, programs or insert cards. The insert cards measure fourteen inches wide by thirty-six inches high. They usually contain a portrait of the star and pictures of scenes from the play. A three-sheet poster measures forty by eighty inches, paper size. Frames for these posters should have a glass front that swings open like a door, for convenience in changing the posters. The posters are held in place by thumb tacks. There is about an inch margin on each poster outside of the picture. The frame should lap partly or entirely over this margin. The size given is that of the extreme measurements of the poster. In addition to the advertising mentioned, it is sometimes desirable to place frames of three-sheet size on the face of the piers. In the vestibule of a large theatre an excellent display can be made with three insert frames on the walls at either side. If space permits, frames for one-sheet posters may be placed between these insert frames. Sometimes it is desirable to place a three-sheet frame on the face of the building at either side of the entrance. A one-sheet poster is twenty-eight by forty-two inches, paper size.

The design character of the vestibule is a matter upon which I need not touch here. I may say, however, in regard to the choice of material that I believe that it is best to use marble for the walls and floors of the vestibule. In the next installment of this article, I shall show several illustrations of vestibules of the larger motion-picture theatres and discuss the relation of the vestibule to the other parts of the theatre.

The next feature of the entrance for consideration is the outer lobby, the purpose of which is to serve as a meeting place for patrons, also as a "lock-out" in case of a crowd. The fire department regulations in the larger cities govern the forming of waiting lines and as stated before, no vestibules or lobbies should be made less than twenty-five feet in width. In cases where the width is less than this, the lines are kept in single file which does not allow the proper handling of a good standing sale crowd awaiting the closing of a performance.

My own observation has led me to regard as especially well planned, from the standpoint of efficient handling of the crowd, the lobbies of the following theatres: Strand Theatre, Capitol Theatre and State Theatre, New York City; the Tivoli and Chicago Theatres, Chicago; the Capital Theatre in Detroit,

and the Allen Theatre in Cleveland. The outer lobbies in these theatres are from twenty-five to sixty feet in width and are designed in good taste. Most of them have marble walls with large mirrors and pilaster treatment. The mirrors are, in most cases, surrounded by ornate metal frames. Below these mirrors are usually placed the radiators which are hidden by richly ornamented metal enclosures. The height of the lobbies in these cases varies from fourteen to eighty feet, depending on the use made of the space above them. In connection with the next installment of this article I shall show views of various lobbies and shall also point out the chief requirements to be met in the design of the grand foyer of a theatre of this kind.

SAGE FOUNDATION LEADS IN DEVELOPMENT OF CITY PLAN FOR NEW YORK.

THE method by which a comprehensive city plan for New York and its environs is to be developed at the instance of and with the leadership of the Sage Foundation was explained at a meeting held May 10.

Mr. Robert W. de Forest, President of the Sage Foundation, outlined the scope of the proposed work. He emphasized the fact that the Foundation will be dependent upon the co-operation of others to carry out the initial plan it purposes to outline and that such a plan can only be carried out with the co-operation of the proper public authorities to whom it must ultimately be presented for modification, acceptance or rejection. Mr. de Forest made plain the fact that while this project will not ignore the element of beauty, its emphasis will be laid, according to the Foundation's charter, on "The Improvement of Social and Living Conditions"—upon a plan designed to make the city a better place to live in and to work in. While the project does not ignore congested Manhattan and Brooklyn, it involves a regional plan of New York and includes not only Greater New York but its environs, on the basis that with present methods of transportation the real New York includes every locality within easy commuting or motor distance and embraces parts of the states of New Jersey and Connecticut.

Mr. Charles D. Norton, Chairman of the Committee on Plan of New York and Its Environs, outlined the method of procedure. He stated that for more than a year the physical survey has been under way. Mr. Nelson P. Lewis, with a staff of engineers, has been studying the density and trends of population, mapping the whole area and going deeply into the various branches of this side of the matter.

With the aid of a special group including William Adams Delano, Jules Guerin, George D. Pratt and Sherman Fairchild, Mr. Lewis will endeavor to develop a new type of map for city planners, in which the painter with his mastery arrangement of color, will be guided by the accurate contours of the engineer and the viewpoint of the aerial photographer.

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CINCINNATI ARCHITECTURAL SOCIETY.

THE Cincinnati Architectural Society held its regular monthly meeting at the club rooms, 128 West Fifth Street, on Monday, May 8. This meeting was especially well attended because of the exhibition of sketches selected from among those submitted in the Birch Burdette Long Sketch Competition for 1921. The sketches, about sixty in number and done in various mediums, were greatly admired by the members and their friends. By special arrangement these sketches were on exhibition in the galleries of the Crafters' Shop at 304 East Fourth Street, for the remainder of the week.

On May 27 the society will hold its annual outing, and everyone is expected to make a special effort to attend, for two of the oldest and most faithful members are leaving. They are Bill Ward, who is going to Los Angeles to take up the practice of architecture, and Gus Linder, who is taking a position in a town in the Tennessee mountains for a time on account of his health. They both go with the best wishes of the Club.

T-SQUARE CLUB, PHILADELPHIA.

THE members of the T-Square Club, Philadelphia, and their friends have been invited by Mr. Samuel B. Fleisher to meet at the Graphic Sketch Club on the evening of May 31. This will be a ladies' night. There will be an exhibition of æsthetic dancing by the girls' dancing class; "Stories in Rhythmic Pantomime," followed by general dancing. The Graphic Sketch Club is holding its annual exhibition, and the adjoining church which has recently been restored, is open for inspection. This building is of interest to architects.

The Joint Exhibition at the Art Alliance will be open till May 27. The Sternfeld Exhibition is still on the walls of the Club House.

UNIVERSITY OF PORTO RICO.

AFTER being on leave for a year Mr. Frederick W. Revels, Director of the Department of Architecture at Syracuse University, is returning to take up his work, having spent the time in organizing and putting into operation a Department of Architecture in the University of Porto Rico. Mr. Revels will return to this country in June. Two men will be employed in the new department at the University of Porto Rico for next year, one to take Mr. Revels' place as Professor of Architecture, and an instructor. The selection of men for these posts has not yet been made. Mr. Revels feels that this is a good opportunity for the right men to do some good service.

BASEBALL GAME BY MEN OF MR. GOODHUE'S OFFICE.

THE annual baseball game between married and single men of the staff of Bertram Grosvenor Goodhue's office was played on Saturday, May 13. The single men were victorious, the final score being 7 to 4. It is notable in connection with this victory for the single men that there are very few of them in Mr. Goodhue's office and in order to make up a full team it was necessary to fill in with office boys. On the other hand, there is ample material for a team among the married men of the force.

TIME OF COMPETITION EXTENDED

IT IS announced that the time of the Competition for Meritorious Designs of Entrance and Screen Doors for Homes and Retail Stores being conducted by The Victor Parting Bead Company, Inc., Reading, Pa., which was to close on May 30 has been extended thirty days.

The prizes offered are as follows: Design Placed First, \$100; Design Placed Second, \$50; Design Placed Third, \$25; All Honorable Mentions, \$5. The Jury of Awards is composed of the following architects: Frederick Ehrsam, Reading, Pa.; Alexander F. Smith, Reading, Pa.; Claude B. Mengel, Wyomissing, Pa.

All wishing to enter the competition should write for program to The Victor Parting Bead Company, Inc., Reading, Pa.

A. I. A. CONVENTION.

THE Fifty-ninth Convention of The American Institute of Architects will be held in Chicago, June 7, 8, and 9.

The program of the Convention this year differs somewhat in kind from the programs of recent years. It will not feature special subjects. It is hoped, by the procedure planned, to have a Convention which will do justice to the administrative business of the Institute and at the same time satisfy the desire for good fellowship and the discussion of those things which have to do with architecture.



From a Painting by Mary Foote.

Thomas Hastings whose portrait is shown above, is to receive the Royal Gold Medal for 1922, his nomination for this honor by the Royal Institute of British Architects having received the approval of His Majesty, George V. The medal will be presented to Mr. Hastings at a meeting of the Institute, June 26.

PENCIL POINTS

THE STATION POINT IN PERSPECTIVE

A WELL-KNOWN architect recently declared his belief that in a perspective drawing the assumed distance between the observer and the picture plane should be equal in actual measurement to the distance a person will naturally stand from the finished perspective to view it. For example, if the drawing were one that a person would step back six feet from in order to get a satisfactory view of it, the distance between the picture plane and the station point would be six feet, without regard for what that distance may represent at the scale of the drawing.

This contention seems reasonable for if a person looking at a drawing does not stand at the assumed station point the picture can hardly seem correctly drawn. A person cannot see the whole of a drawing clearly unless the distance between him and the drawing is at least as great as one-and-one-half times the greatest dimension of the drawing. One must stand six feet away from a four-foot picture. This is due to the fact that the extreme angle of vision of the eye is only about 45 degrees and that everything outside of a visual cone of that angle is cut of the field of vision. This basic fact was clearly set forth in Mr. Valenti's article in the issue of this journal for June, 1920.

Now if the assumed distance between the observer and the picture plane is less than one-and-one-half times the greatest dimension of the picture, an impossible condition is represented. If on the other hand the assumed distance of the station point is too great, the person looking at the picture will feel troubled, the perspective will seem flat, the lines will not converge as rapidly towards the vanishing points as he feels they should. If he happens to step back far enough to place himself at the assumed station point he will find that he is too far from the picture to see it comfortably.

It is probably much more often that one finds the station point assumed too close to the picture plane than at a great distance. The result of this error is the too rapid convergence of the lines to the vanishing points, giving a representation of the building akin to the kind of photograph one sometimes sees that has been made with a lense of extremely wide angle. The bad effect of such photographs is recognized by many photographers, who are practically compelled to use lenses of extremely wide angle occasionally by customers who, as one photographer expressed it, "want the picture to take in everything in front of the camera and behind it too." There is little excuse for this fault in photography and none whatever for it in perspective drawing.

Assuming that the rule stated at the opening of this article is a good one, and recalling what has been said about the distance one must stand from a picture to see it comfortably, the whole matter seems to come to this—that the assumed distance between the observer and the picture plane should be not less than one-and-one-half times the greatest dimension of the drawing, including any landscape or other surroundings of the building that may be shown in the drawing.

This raises an interesting question upon which we shall be glad to have expressions of opinion from readers.

A new level for the architect and construction engineer has just been placed on the market by the Warren-Knight Co., 136 North Twelfth Street, Philadelphia. It has been designed with the purpose of making it convertible into a transit with the greatest speed and ease and back again, without the use of detachable parts and without throwing the instrument out of level. It also includes many patented improvements. This level is described in an illustrated folder just issued by the makers.

The code of ethics of the architectural profession is discussed in an issue of the "Annals" just published by The American Academy of Political and Social Science, Philadelphia. This issue of the "Annals" is largely devoted to outlines of the codes of ethics of different professions.

CITY PLANNING CONFERENCE.

The National Conference on City Planning will hold its fourteenth annual meeting at Springfield, Mass., June 5-7, in conjunction with the Convention of the Massachusetts Federation of Planning Boards, and at the invitation of His Honor, Mayor Edwin F. Leonard, The City Planning Board, and the Springfield Chamber of Commerce. All sessions open to the public. An interesting program has been arranged.

ROBERT A. LOCKWOOD

ROBERT A. LOCKWOOD, one of whose excellent drawings was reproduced in the January issue of this journal, was born in San Francisco.

Mr. Lockwood received his architectural and artistic training in the offices of Messrs. Reginald Johnson, Carleton Monroe Winslow and Myron Hunt, in Los Angeles, and in the local atelier of the Beaux-Arts Institute of Design, supplementing this work with sketching out-of-doors, and with life-class work.

In 1913 Mr. Lockwood won the Spiering Prize and was placed in the Loeb Prize. In 1914 he won the Beaux-Arts Esquisse Medal, and he was placed second in the Birch Burdette Long Sketch Competition for 1921.

During the war he served in the Camouflage Corps, in the organization of which Mr. Frank Chouteau Brown was head. After the armistice was signed he remained in France for some time, making sketches and drawings, many of which have been placed in the official records of his Company.

Since the war he has been in the office of Mr. Myron Hunt, Los Angeles, until recently, when he left to take a position with Messrs. Holabird & Roche, Chicago. Mr. Lockwood's renderings of architectural subjects have individuality and force and show a mastery of technique that comes only with earnest study.

The esteem and friendship of his former comrades in the office of Mr. Myron Hunt are evident in their good wishes for his success in the East.



Robert A. Lockwood



AUSTIN WHITTLESEY.

AUSTIN WHITTLESEY, one of whose pencil drawings is reproduced on a plate page in this issue is a member of the staff of Mr. Bertram Grosvenor Goodhue's office. His early training was with his father and other architects in San Francisco, including Mr. Lewis P. Hobart. He early reached the conclusion that Mr. Goodhue was the only man who could give him the training in architecture he wished and he came to New York when he was twenty years old with the fixed purpose of entering Mr. Goodhue's office. It was, however, two years before Mr. Goodhue would take him on, and in the meantime he worked in various architectural offices in New York and for a time in Cleveland, O. For the past seven years Mr. Whittlesey has been with Mr. Goodhue, excepting the time he spent in the army and in travelling abroad. He won the Le Brun Travelling Scholarship in 1916 and elected to go to Spain and North Africa to study.

Both in San Francisco and in New York, Mr. Whittlesey belonged to ateliers, following the course of the Beaux-Arts Institute of Design. The example and criticisms of a number of his artist friends in California aroused in Mr. Whittlesey an interest in sketching out of doors, a practice which he has continued more or less intermittently, and with results that are suggested by the reproduction of the example of his pencil to be seen in this issue.

ELEVATOR INTERLOCK REPORT

A REPORT that gives the results of a field survey of several thousand elevator landings equipped with various types of mechanical and electro-mechanical interlocks and contact devices has been prepared by C. E. Oakes and J. A. Dickinson under the title "Results of a Survey of Elevator Interlocks and an Analysis of Elevator Accident Statistics." It is known as No. 202 of the Technologic Papers of the Bureau of Standards and copies may be obtained for five cents each from the Superintendent of Documents, Government Printing Office, Washington, D. C.

The statistics show that 73.8 per cent. of all fatal accidents might be prevented by well-designed interlocks.

ARCHITECTURAL DETAIL, PART XIV.

(Continued from page 13)

A metal flashing may be laid under the two outer layers of slate or the slate may be cemented and the nail holes filled as well. However, ridges and hips of steep roofs may be mitred without cement save for the filling of the nail holes.

Dormers present no special features other than those incidental to the treatment of valleys, hips and ridges. It is very usual to slate the cheeks and in such an event better in the opinion of many experts to use smaller and thinner slate for the cheeks than for the main roof. This is a matter of design appreciable when one considers that the dormer is naturally a smaller element than the main roof itself. Furthermore, as can be seen in the Arthur Williams house, if the horizontal lines of the roof are run into and continued along the dormer cheeks, the inclination of the roof slate requires a greater dimension than does the verticality of the cheek slate. The dormer of the C. Bai Lihme house has a less number of courses on the cheek than the corresponding run of the main roof, and may be studied as an example of the opposite method.

Eye-brow windows have been much in vogue with certain architects. They are hard to lay. Perhaps the best way to make an inexpert roofer understand the problem is to tell him that they are really a slit in the roof pulled out and up. One of two things happens: either the exposure to the weather is increased and longer slate must be used, or extra lines of slate have to be inserted.

English methods of weaving slate valleys were shown in a diagram by Mr. D. Wynne-Thomas in the January, 1922, issue of PENCIL POINTS. The illustrations in the present number show excellent American examples that will repay examination.

Gables present problems of which we have not yet spoken. Where half-timber walls or decorative wood barge-boards form an integral part of the design, a wood mould under the slate seems reasonable. On the other hand designers unfamiliar with the use of slate sometimes seem at a loss when confronted with the finishing of a stone or stucco gable wall, and resort in a somewhat inexpert manner to the introduction of a wood mould that is as foreign to the other materials involved as is the gash of metal in an open valley. A better solution is to cement up under the projecting slate (the slate may project an inch and a half or so) using in this case Portland cement mortar slushed under the edge of the slate after it is laid. A building with cut-stone mouldings would naturally have a stone mould or cornice so that all difficulties would disappear. If a stone gable wall rises above the roof be careful to flash well into the stone, perhaps quite through the wall as the stone is likely to be porous and give rise to leaks. Portland cement must not be substituted for the uses for which slater's elastic cement has been advised. Portland cement cracks under such conditions.

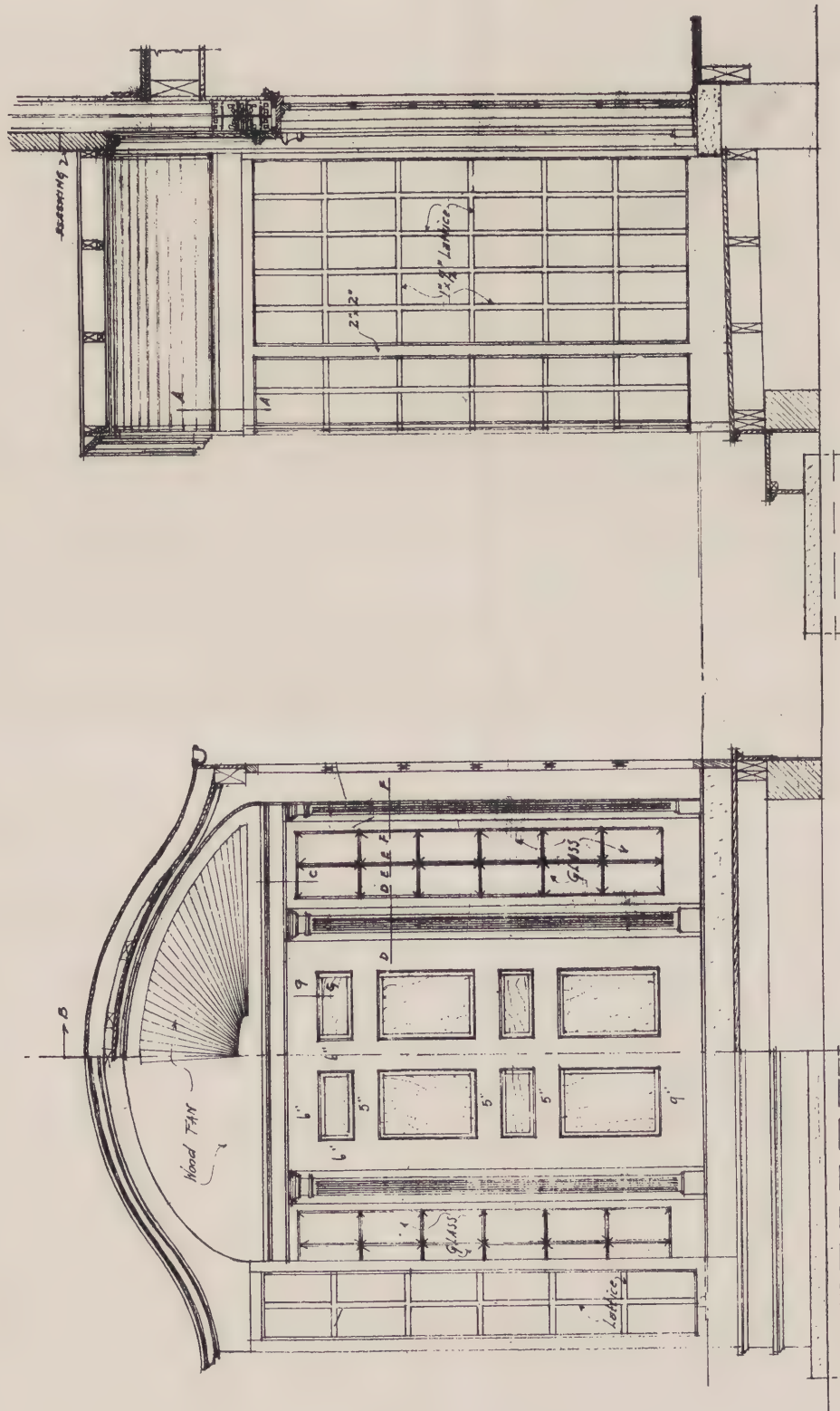
Graduated slate roofs present most interesting problems and of late years have crowded out the evenly coursed roof. When stone roofs were used in Tudor times the large blocks were left in the fields during the winter weather and in the spring were found to have split up into layers of varying thickness and size. The builder thus had at hand large and small pieces for the roof he might need to cover and squaring them off roughly, laid the larger, heavier pieces close to the supporting walls and the thinner pieces over the middle of the span. The latter were usually the smaller ones, often the left-overs. Thus a fashion in graduation has been set.

Today there is no logical reason for a graduated rough roof except that it has beautiful texture and variety of effect.

A good custom for an average size roof is to graduate it in five more or less equal parts as regards length of exposure. This regularity of diminution does not hold for the thickness of the slate and it is quite good practice to adopt three general thicknesses, lay three of the upper divisions of exposures of the thinnest group, and increase the thickness more rapidly toward the bottom of the roof. Thus there will be more thin than thick

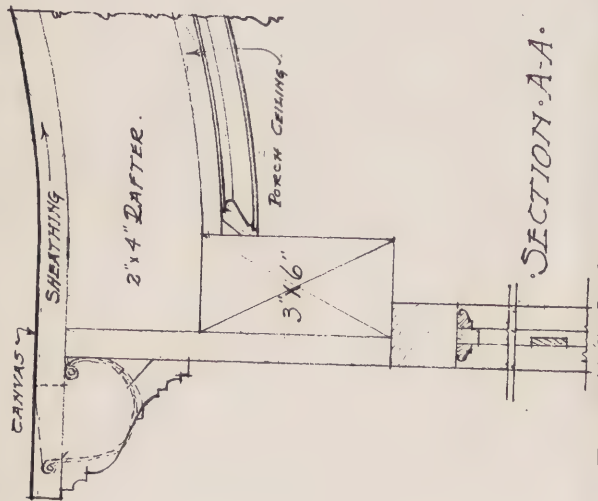
(Continued on page 36)

PENCIL POINTS

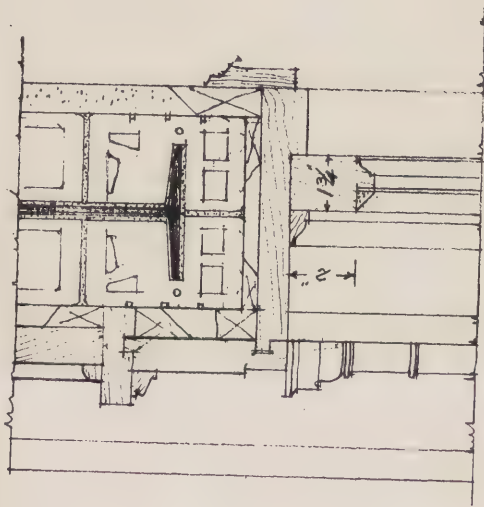


Details of Main Entrance of House for Rudolph C. Culver, Esq., at Scarsdale, N. Y. Mann & MacNeille, Architects.

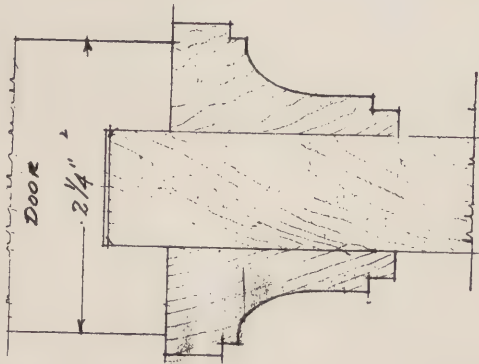
See Photograph on Page 37.



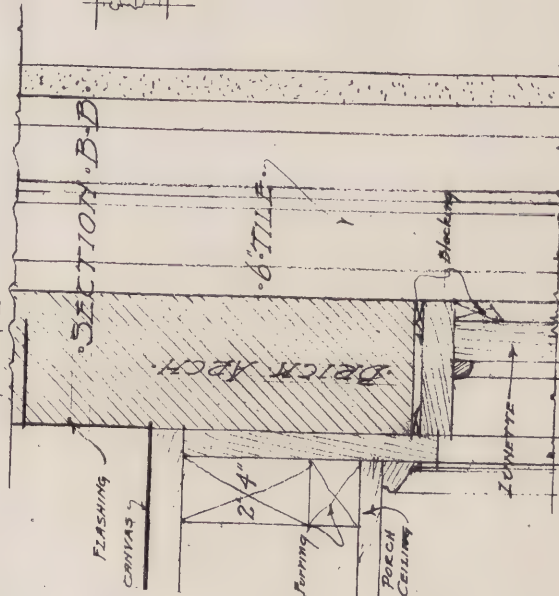
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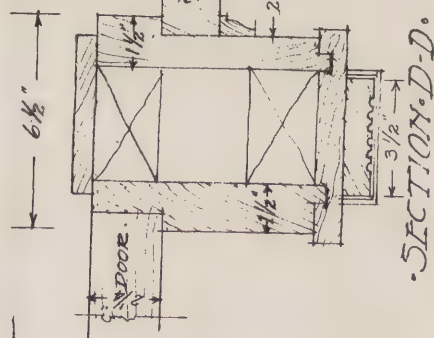
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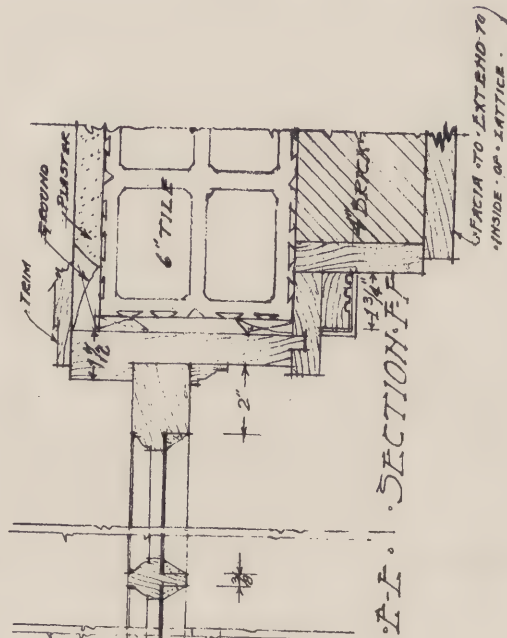
SECTION G-G.



SECTION B-B.



SECTION D-D.



SECTION F-F.

Details of Main Entrance of House for Rudolph C. Culver, Esq., at Scarsdale, N. Y. Mann & MacNeille, Architects.

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, Metropolitan Tower, New York City.

Question—I would appreciate information as to books of building details—I mean books with drawings, data, etc., regarding different types of windows, doors and miscellaneous parts of a building in detail, with measurements. C. H. E. *Answer*—In reply to your inquiry relative to books on building details, we suggest the following: Radford's "Building Details." Martin's "Details of Building Construction." Hoole & Johnson's "Building Construction." Frank M. Snyder of 463 First Street, Pelham, N. Y., has published a very full collection of details of public buildings that have been constructed by the best architectural offices, under the title of "Building Details." It consists of twelve volumes, four of which, we believe, are out of print. The Architectural Service Corporation of 140 North 6th St., Philadelphia, has published a series of service details which can probably be obtained by writing to them. Sweet's Catalogue Service, Inc., publishes "Sweet's Architectural Catalogue" and that contains detail drawings of many specialties.

Question—I would like to know the names of a few books on water-color rendering. Will you recommend some books? A. C. *Answer*—Making reply to your inquiry we have to say that we believe H. Van Buren Magonigle's book on "Architectural Rendering" is the latest and most comprehensive work on this subject. It is published by Charles Scribner's Sons, 597 Fifth Ave., New York City, and we believe the price is \$5.00.

Question—Can you kindly furnish me a list of books on Spanish Renaissance, specially on detail? W. H. B. *Answer*—We would suggest the following: Prentice, "Spanish Architecture"; Uhde, "Baudenkmaeler in Spanien und Portugal"; Byne and Stapley, "Spanish Iron Work and Spanish Ceilings." Also Byne and Stapley, "Spanish Interiors and Furniture," now being published by William Helburn, 418 Madison Ave., New York, in four parts. There is a reprint of the Prentice that might prove entirely satisfactory. The original is out of print and rare. The German book is an excellent one and can be bought cheaply on account of the low value of marks.

Question—I am interested in Old English Architecture, will you please refer me to books showing designs in this style? I. T. C. *Answer*—Relative to works on Old English architecture, we would recommend: Uhde, "Baudenkmaeler in Grossbritannien"; Garner & Stratton, "English Tudor Architecture." There is a series of books on old farm houses in different counties of England, but these books are, unfortunately, out of print.

Question—Will you please recommend a book on interior decoration that describes the various period styles and shows typical designs in each style? J. C. V. *Answer*—The book that will probably meet your requirements best is the one by C. R. Clifford, published by Clifford & Lawton, New York City.

ARCHITECTURAL DETAILS, PART XIV.

(Continued from page 33)

slate in the roof. Furthermore the cost is somewhat decreased by this process. Too close adherence to such a rule will give a flat roof at the top with a sudden bursting out of roughness at the eaves. Some thicker or medium slate should be run into the middle or upper parts of the roof and the whole carefully balanced.

A very good graduated roof can be made with slate varying from $\frac{3}{4}$ -inch at the eaves to $\frac{1}{4}$ -inch at the ridge, thirty-inch slate perhaps for the lower courses and sixteen-inch for the top. On the other hand, slate an inch and a quarter or inch and a half do not look too heavy for a rough or rustic piece of work and two-inch slate can be introduced successfully to give special notes. Some of the slate in the Potter Gate Lodge appear to be as thick as that.

It is possible to graduate the color of a roof as well as the length of the slate or their thickness. This is less usual but I have been told of one job in which the appearance of height in a building, perched on a knoll, with requirements that prescribed a certain number of feet from ridge to ground was reduced by graduating the color of the roof from dark at the ridge to a light tone at the eaves.

One general recommendation, the most important, should be left with you who would use slate to good advantage. It may be summed up in the single word "Character." How many buildings, in other respects excellent, have been ruined by the texture of the roofs that extinguish them. Be the slate graduated, or evenly coursed, it must not be woolly or rugged if it covers a trim, perchance smug Colonial mansion, and a smooth, straightly-trimmed, even slate will seem hard and flat on a rustic stone cottage or above the roughly-carved Tudor of a Mediaeval manse.

ELEMENTS OF CONCRETE-AND-STEEL CONSTRUCTION.

(Continued from page 28)

the foundation. In the case of the steel grillage, the space between the beams should be carefully grouted with a grout thin enough to insure that no voids are left where water may collect and corrosion start. The top grillage is bolted to the steel column, but there is usually no connection between the bottom and top grillage. The bottom grillage is designed to spread the pressure to a certain bearing medium and this medium may be either rock, concrete, soil or masonry. In order to save concrete the spread footings are usually stepped down or provided with a cap, or they may be battered in place of being stepped. In all cases where a steel column rests on a concrete foundation it is necessary to have a steel base larger than the column section in order to reduce the intensity of the stress on the concrete.

PENCIL POINTS

THE AMERICAN ACADEMY IN ROME

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following: "Sculptor Jones has completed a figure for the fountain which he has taken for his last year's work. He has just been in talking with me about his plans for the future. He goes to Northern Italy in a few days for a trip of about a month, and then he returns to complete many odds and ends before he returns to America. As he already has several commissions promised him, I do not believe he will have any difficulty in starting out in New York in his practice. Painter Lascari has made two remarkable drawings in color, one of a Vatican ceiling and the other of the famous chapel of S. Zino in S. Prassede, Rome. He is delighted with the prospects of being permitted to look after the mosaics which Mr. Blashfield has designed for your church in Washington—Mr. Lascari has made a careful study of the best mosaic work in Italy and Mr. Blashfield's mosaics should be well executed under his care. Architect Smith has left for Northern Italy and a flying trip to Paris. Sculptor Cecere is in Greece. I received an enthusiastic letter from him a day or two ago, in which he shows that he appreciates the extraordinary vigor and beauty of Greek sculpture. A number of our visiting students have gone as far east as Constantinople. Some of them travelled third class on the boat, sleeping out on deck; but they state that the inconveniences were more than counterbalanced by what they found in Greece and Constantinople. Painter Ciampaglia has returned from the hospital, where he successfully underwent an operation. He is hard at work again.

A new Rotch man has registered with us, likewise the holder of a Fellowship in Painting from the Philippines. The latter has three years in Europe (one year in Madrid, one year in Rome, and one year in Paris). The American Government is doing splendid work in the Philippines, so I understand.

I have succeeded in finding four people willing to contribute \$50 apiece toward the purchase of materials for fresco painting, and in a few days our painters and architects are going to tackle that interesting problem.

Two excursions have been undertaken, one to the French Embassy to see the famous flat wooden ceilings, and the other to the Villa Albani. On the latter excursion the students of the French, Spanish and English academies joined with us, and Senator Lanciani explained the collections.

We have already begun to prepare for the annual exhibition. We have asked the King and Queen to honor us with their visit on the 18th of next month (May) and we expect to have our public exhibition three days later. Composer Hanson is at work upon an original piece which is to be played in honor of the King and dedicated to him. We are going to present His Majesty with a bound copy of the composition. The exhibition comes rather late this year on account of the Conference of Genoa, at which the American Ambassador is to act as an official observer. The conference starts in a few days and will last probably a month, so our exhibition could not be placed at an earlier date, as the Ambassador wishes to be on hand to receive Their Majesties.

I can add but little to what I told you last month in regard to the Banca Italiana di Sconto, except that it seems now likely that the bank will come to some definite conclusion within a week as to its payments.

I received a drawing from Mr. Kendall of the McKim-Morgan Memorials. The design is most attractive and should add greatly to the beauty of the building; to say nothing of the fitness of the memorials for these two public spirited gentlemen.

We have planted all the trees (except five) which Mr. Kendall and Mr. Vitale are giving and toward which the trustees have contributed \$200. The new tall cypress trees in the court look especially well.

I have prepared two reports during the last month, one upon the advisability of establishing an atelier in Rome under the auspices of the academy for students not connected with the academy, and the other upon the possibilities of housing all the members of our staff, thirty men

students and ten women students. These reports have been sent to Mr. Mead. Mr. and Mrs. Mead are in Venice for a week.

Senator Phelan of San Francisco, one of the counselors of the Academy, is in Rome. He has shown considerable interest in the work."

SOUND-PROOF PARTITIONS.

AN INTERESTING report of experiments conducted for the purpose of studying the relative efficiency of different kinds of partitions in insulating against the passing of sound is "*Sound Proof Partitions*" by F. R. Watson. It is known as "Bulletin No. 127, Engineering Experiment Station," and is published by the University of Illinois, Urbana, Ill. The price is forty-five cents.

Although, as the introduction to this bulletin states, the present knowledge of this subject is incomplete, it has been thought desirable to collect and present the available information in a systematic way, and set forth recommendations that may be applied where sound-proofing is desired.

Though little was known about this subject previous to 1915, much has been accomplished by scientific investigators since that time, and this bulletin contains interesting and useful reports on the study of this matter.

This report contains many tables showing comparative results obtained in experiments with partitions of different materials and different construction, photographic illustrations of apparatus used in testing, diagrams of apparatus, photographic views and diagrams of different types of partitions as well as descriptions of tests.

The information contained in this bulletin is very useful in designing hospitals, hotels, office buildings, and all other structures in which insulation against the passage of sound from one part of the building to another is desirable.



Detail of Main Entrance of House for Rudolph C. Culver, Scarsdale, N. Y. Mann & MacNeille, Architects. See Detail Drawings on Pages 34 and 35.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION PART III.

By OTTO GAERTNER

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Interior Swimming Pools—It is impossible in an article of this length to go into all the different phases of swimming pool construction and mechanical equipment, but the writer will endeavor to touch upon such items as may be of help to the man who is preparing the working drawings, and as will lead him on to other phases of construction and design enabling him to solve his own particular problem.

The first important considerations for the swimming pool are sunlight and cleanliness. Its location should be selected with care. A well lighted pool always proves popular. If necessary, the sunlight may be subdued, but the less sunlight reaching the pool the higher the percentage of bacteria in the water. Most pools are placed in the basements of buildings, without adequate ventilation, and without sunlight or even daylight. Such a pool gives one a confined and depressed feeling which cannot be overcome even if the utmost care is taken for cleanliness and good artificial lighting. Therefore, if possible, place the pool outside the remainder of the building so that it can have a skylight roof. If it must be placed under one of the upper stories, place it on the sunny side of the building. Often the conditions and the appropriation available will permit the pool to be placed on the top story so that it can have a skylight, and often the building can be planned with a large light-court so that a skylight can be placed over a large part of the pool below. The pool should be placed near the bath and shower rooms, and it should be entered through the latter, except in the case of spectators for whom there may be galleries at the sides of the pool on the same level but preferably at a higher one. Everyone using the pool should be required to take a thorough bath or shower before entering the pool.

The sizes of pools and the adjoining floor spaces vary according to the requirements and the conditions of each individual problem. There should be a floor space of at least five feet at each side and at one end of the pool, and twelve feet from the deep end of the pool, where the springboard is placed, to the wall; ten feet at the sides and at one end, and fifteen feet at the deep end is nearer the ideal. These dimensions are often increased, and sometimes only five feet is left at one side and at one end while the others are increased to accommodate the swimmers. Most pools are now made about sixty feet long and from twenty to thirty feet wide, these dimensions being increased when possible. A pool that is less than forty feet long is too short for practical purposes in an athletic club or Young Men's Christian Association where the sixty-foot pool is made the standard. Some swimming rules demand a pool at least twenty feet wide by at least sixty feet long, in order that the records may be counted as official.

The depths also vary according to the requirements. One end can be shallow for children and those learning to swim, and the remainder can be deep enough for diving. Where there is a spring board, or where one is likely to be installed in the future, the water should be deepest twelve or fifteen feet from the deep end of the pool. The rules for championship events require a depth of water of at least seven feet at the deep end of the pool, and not less than three feet at the shallow end. Some pools are made only six and one-half feet deep at the deep end and three feet deep at the other, but the

majority are from seven and one-half to ten feet at one end and three and one-half to four and one-half feet at the other. They are also generally made nine or nine and one-half feet at a distance of twelve or fifteen feet from the deep end, from which point they slope upward to a depth of five or six feet at a distance of about twenty-five feet from the corresponding end of one sixty feet long. From there they slope upward to the shallow end. This makes what is known as the spoon-shaped bottom, and is generally found most serviceable with a minimum of water required for filling. The next best shape is obtained by sloping the bottom upward from the nine or nine and one-half feet deep point direct to the shallow end. Probably the most favored dimensions for a pool are twenty-five feet wide, sixty feet long, four feet deep at the shallow end, seven feet deep at the deep end, nine and one-half feet deep twelve feet distant from the deep end, and six feet deep thirty feet distant from the deep end. The floor must also pitch to the one or more drains for emptying the pool. For water polo matches the regulation length of the playing space is sixty feet and it must be at least six feet deep. For this purpose a pool that is seventy-five feet or more in length is generally preferable.

A swimming pool should be laid out in units of three or fifteen feet, so that the distances can readily be computed for competitive events. For such purposes, lines should be placed every five feet, running vertically on the walls of the pool, and running lengthwise and crosswise on the floor. They serve as direction as well as distance lines and can be formed by a contrasting color in the tile or other finish of the pool. The depth of the water should also be indicated every five feet around the pool at the edges where it can be seen by those in the water as well as those standing on the floor adjoining it. There is a large variation in the amount of marking, and often the vertical and crosswise lines are omitted except such as are needed for official swimming and turning lines, jackknife limit, and the official playing lines for water polo and water basketball.

The ceiling height of the room in which the pool is located should be at least twelve feet, and the higher it is the better, especially if there is to be a spectators' gallery.

There are so many various methods of constructing the pool that it is impossible to do more than to touch upon this phase of the work, each case presenting a problem of its own. If the pool is in the basement, ground-water conditions must be overcome by waterproofing to keep it out, and the walls must resist it when the pool is empty, the stresses being equalized when the pool is full. The thickness of the walls and bottom are based upon hydrostatic pressures, and if they are made of reinforced concrete the reinforcement must be strong enough to suit the stresses. Sometimes steel tanks or pans lined with concrete are used, their chief advantages being less and more even settlement where unequal bearing soils occur, and their water-tightness. Steel tanks are sometimes used where the pool is located on an upper story, the thickness of the steel being determined by the conditions and the concrete lining being made sufficiently thick to give it additional rigidity. In many cases steel tanks are giving place to reinforced concrete, even in the upper stories of buildings where vibration, wind pressure, expansion and contraction, and the weight of the water when the pool is filled must be taken into consideration.

The waterproofing of the swimming-pool is the most difficult part of the work, and special care must be taken around the piping extending through the walls below the water line. The pool may be made watertight by several methods, depending upon the problem involved, and one or several of them may be used at the same time. Usually the membrane and the integral method are used together, and also the metal pan with either the membrane or the integral method. The membrane method consists

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of applying hot asphalt or pitch to the masonry and then from three to six layers of strong fabric or felt with hot asphalt or pitch between, finishing with an additional coating of hot asphalt or pitch. The integral method consists of mixing a waterproofing compound into the setting mortar, into the concrete, or into a one inch thick layer of mortar applied to the masonry. It is well to apply such a layer between the membrane waterproofing and the finishing material of the pool, or to take some other precaution to prevent the possible staining of the latter. The metal pan may be of steel, four or five pound lead, or eighteen ounce copper, the last two being placed between two thicknesses of masonry. Sometimes the membrane is applied directly on the metal pan. The waterproofing should always be protected by masonry, which should be rigid enough to resist water pressure behind it when the pool is emptied quickly. If a steel pan is used there should be waterproofing between it and the finish, and if the pool is built into the ground the pan should be waterproofed on the outside, if ground water occurs.

The finished surface of the pool may be enameled brick, glass tile, glazed or vitrified tile, glazed terra cotta, marble, or any material having a smooth impervious surface with a minimum of joints. All corners and angles should be generously rounded. Tile may be glazed for the walls and unglazed for the floors. Ceramic mosaic is especially adapted for this work, and lends itself for the lines and markings. If terra cotta is used, the joints should be ground and fitted at the shop to insure uniform three-sixteenth inch joints, and the markings can be made with underglazed colors. The pool should have a combined hand rail and recessed scum gutter so as to eliminate the projecting ropes and rails which are difficult to keep clean, interfere with the proper use of the pool, and are dangerous for the swimmers. This gutter should be about four inches wide, and have a vertical front about two inches thick and at least three inches high with a rounded top absolutely level, to act as a uniform overflow for removing dust and other matter from the surface of the water. Any unevenness will be apparent as soon as the pool is filled. On the back of this vertical front there should be a groove to serve as a finger grip when using it as a hand rail, and if recessed steps or ladders of tile or similar material are used, there should be a similar groove in the floor above. The steps and groove should be pitched or provided with weep holes for draining off water. The bottom of the gutter must be pitched at least one-eighth of an inch to every foot, and be provided with drains protected with strainers. The most satisfactory and economical method has been found to be that where the drains are placed twenty feet apart with the gutter pitching toward them. The recess of the gutter must be made deeper at the drains to accommodate the strainers. The upper part of the scum gutter should form the edge of the pool. It should be well rounded and set back two inches from the faces of the four walls to aid in keeping water from the floor above from finding its way into the pool. The two inches should not be exceeded as a greater setback might prove injurious to someone slipping into the pool. The top of the gutter should be from ten to eighteen inches above the surface of the water, the latter being the official requirement of the swimming rules. It should also be flush with the floor of the room and not raised. The floor must pitch away from the pool at least one-eighth of an inch to the foot toward floor drains placed to suit the plan, floor mats, and so forth. This floor is preferably made of vitrified tile, and eighteen-inch wide strip at the edge of the pool having a non-slip surface. Fountain cuspidors and a drinking fountain should be recessed in available locations.

The walls and ceiling of the room should be of tile, enameled brick, or any other non-absorbent material. In a room of this kind there is much condensation which quickly attacks wood, paint, and plaster, making repairs frequent, expensive and inconvenient. While non-absorbing material may be more costly at first, it will prove the cheapest in the end and results in a more cheerful and sanitary room, the walls of which can readily be washed free from dust adhering to the condensation. There is no limit to color schemes that can be used.

To Be Continued.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Ripolin Specifications—Complete specifications showing methods of applying Ripolin Enamel to all surfaces. 12 pp. 8 x 10½ in. The Glidden Co., Cleveland, Ohio.

Ceiling Sockets for Electric Work—Booklet describing improved type of concrete insert for ceiling fixtures, etc. 12 pp. 6 x 9 in. Security Insert Co., Hope and Norris Sts., Philadelphia, Pa.

Artists' Supplies—Catalogue showing Winsor & Newton line of supplies for artists, architects and draftsmen. 120 pp. 6 x 9 in. Winsor & Newton, Inc., 31 East 17th St., New York.

Stage and Theatre Lighting Apparatus—Catalogue K showing complete line of lighting equipment for theatrical and similar uses. 130 pp. 6 x 9 in. Universal Electric Stage Lighting Co., 321 West 50th St., New York.

Milcor Sheet Metal Building Products—Condensed catalogue and price list of sheet metal building specialties. Profusely illustrated. 100 pp. 4 x 8 in. Milwaukee Corrugating Co., Milwaukee, Wis.

Complete Water Systems—Bulletins describing water systems for isolated buildings. Small isolated power plants and sewage disposal plants, specifications. 48 pp. 8½ x 11 in. Kewanee Private Utilities Co., Kewanee, Ill.

The Ventilighter System—Illustrated booklet showing application of Ventilighters in many types of buildings. Modern lighting and ventilation. 16 pp. 8½ x 9½ in. Simon Ventilighter Co., Inc., 101 Park Ave., New York.

Speakman Showers and Fixtures—Catalogue H. Complete illustrated catalogue of showers and other plumbing fixtures with roughing-in measurements, etc. Bound book. 251 pp. 4¾ x 7¾ in. Speakman Co., Wilmington, Del.

The Minneapolis Pressure Regulator. Leaflet No. 70—Describing and illustrating apparatus for control of pressure on vapor or steam heating systems and installations. 2 pp. 6¼ x 10 in. Minneapolis Heat Regulator Co., Minneapolis, Minn.

How to Build a Better Home—Illustrated booklet treating various phases of home building with chapters on roofing, plumbing, hardware, heating, etc. 30 pp. 8 x 10½ in. Copper and Brass Research Association, 25 Broadway, New York.

The Lamp of Hospitality—Illustrated booklet showing exterior lighting fixtures for streets, estates, public buildings and private homes. 16 pp. 4¾ x 7¼ in. Smyser-Royer Co., York, Pa.

A Better Summer Business—Addressed to proprietors of motion picture theatres but of interest to architects designing such theatres. This booklet describes the Monsoon Cooling System. An illustrated booklet. 32 pp. 6¾ x 8¾ in. Monsoon Cooling System, Inc., 71 North 6th St., Brooklyn, N. Y.

The Heart of the Home—Illustrated catalogue of Deane's French kitchen ranges, showing types to meet various requirements. 31 pp. 6 x 9 in. Bramhall, Deane Co., 261 West 36th St., New York.

Bishopric—For All Time and Clime—Illustrated book showing finished buildings, details of construction and giving working specifications and details, together with much other interesting matter. 52 pp. 7¾ x 10½ in. The Bishopric Manufacturing Co., 110 Este Ave., Cincinnati, Ohio.

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THE A. I. A. AND THE YOUNGER MEN

AT THE recent Convention of the American Institute of Architects in Chicago, two developments of special interest to the younger men were, the resolution relating to the Junior Class and the proposal regarding graduate fellowships.

The resolution covering the Junior Class provides that any graduate of a school of architecture recognized by the Institute is eligible as a Junior upon submission of proof of his graduation, provided application is made within two years of graduation. This includes the special student whose application carries with it the recommendation of the Dean, or Faculty, of the school in which the student was given his certificate.

It is provided that, Junior affiliation shall expire automatically when the Junior reaches the age of thirty, unless previously terminated by the advancement of the Junior to Membership or Chapter Associateship, or by his resignation, or by the Board of Directors for any cause it may deem sufficient.

The Junior agrees to be bound by the disciplinary rules of the American Institute of Architects.

Application for admission as a Junior is to be submitted on a form authorized by the Board. The annual dues of a Junior are fixed at \$5, of which \$2.50 are to be for one year's subscription to the Journal of the Institute.

It is provided that when an application, in proper form, is received by the Secretary of the Institute, the applicant shall be declared elected a Junior and the membership of the Institute shall be notified accordingly.

It is provided that Juniors shall receive the Journal of the Institute, also the Proceedings of Conventions and such other Institute documents as the Board may direct. Juniors shall be designated by the affix "Junior of the American Institute of Architects," which affix shall not be used in abbreviated form.

The resolution also provides that a Junior shall not be a corporate member of the Institute, nor shall he have any interest in or claim against the property of the American Institute of Architects, nor be entitled to vote in any Convention of the Institute except on the sense of the meeting. He shall not be entitled solely on account of his Juniorship to claim affiliation with any Institute Chapter, except that he shall have the privilege of attending meetings.

He shall not exercise any privileges granted to members in the By-Laws, except those specifically granted him. It is provided that there shall be no initiation fee for Juniors.

This resolution, the main features of which are given above, provides for the establishment of a relation between the young graduate in architecture and the Institute that should be a distinct benefit to the former in many ways, and at a nominal cost. It provides a means by which he may have a recognized status in relation to the Institute from his graduation till such time as he may be advanced to Membership or Chapter Associateship. It bridges the gap between graduation and full recognition. This provision should do much to strengthen the younger men who qualify for Juniorship, both in the eyes of the public and in their sense of their professional relations.

The proposal regarding graduate fellowships, made by the Committee on Education, and, on motion, referred to the Board with power to act, was that ten fellowships of Three Hundred Dollars each for graduate fellows be awarded by the Institute. It is hoped that some of these fellowships may be allotted in two or more schools.

SKETCH COMPETITION OPEN

THE announcement of the Birch Burdette Long Sketch Competition for 1922 appears on another page of this issue.

This early announcement is made in order that those who contemplate entering may make sketches during the summer months when the weather conditions and the customary vacations provide the best opportunities for sketching. The competition closes at noon, October 30, 1922. Prizes aggregating two hundred fifty dollars will be given by Mr. Birch Burdette Long to the winners named by the jury of award. The purpose is to encourage sketching, more particularly on the part of draftsmen and students.

The first of these competitions, held last year, aroused a great deal of interest, the response was immediate and large, and a great many interesting sketches were submitted from all parts of this country and some from England and Canada as well. The number of entrants should be even larger this year, for last year's competition set the ball rolling.

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*Grand Foyer of Loew's State Theatre, New York City.
Thomas W. Lamb, Architect.*



*Grand Foyer of The Capitol Theatre, New York City.
Thomas W. Lamb, Architect.*

MOTION PICTURE THEATRE DATA PART II

BY EMIL M. MLINAR.

In this serial article Mr. Mlinar, who is the New York associate of C. Howard Crane, Architect, Detroit, Michigan, is going thoroughly into the practical considerations in motion-picture theatre design, presenting the data indispensable in designing and making drawings for such theatres. Mr. Mlinar specializes in theatre work and was formerly of the office of Thomas W. Lamb.—Ed.

CONTINUING the discussion of the requirements of the outer lobby from the installment of this article that appeared in the last issue, it seems well to consider some well-designed outer lobbies of motion-picture theatres and to see how the requirements have been successfully met in these cases. For this purpose, several photographic illustrations are given in these pages.

The outer lobby of the Allen Theatre at Cleveland, Ohio, a photograph of which is shown at the top of page 13, clearly illustrates the method of planning and treatment recommended in the last issue. In this case no provision was made for an inside ticket office. Ample facilities for the sale of tickets have been provided in the ticket booth in the vestibule and this arrangement has worked out satisfactorily. This lobby is twenty-five feet wide in the clear and one hundred feet deep; it opens into the rotunda shown at the bottom of page 13.

If, however, the owner of the theatre feels that an inside ticket office should be provided, as is sometimes the case where the theatre is for a combination of vaudeville and motion pictures, ample space should be allowed for the various purposes for which such a ticket office is used, namely, not only for the sale of tickets but for the storing of tickets, programs, etc., and the counting up of tickets. Also a switchboard is often installed here which controls the lighting of the outer lobby, the vestibule, the marquee and any electrical display signs that may be used. I consider seventy-two square feet of area adequate for such a ticket office, not making the room more than seven and one-half feet in depth from the front to back at the ticket window. This room should be placed at the right hand side of the lobby when possible.

As a rule, the outer lobby, by reason of its posi-

tion along the sidewalk, is in that portion of the building in which it is impossible to have a high ceiling on account of rooms above. This is the case in all of the theatres illustrated here, excepting the Tivoli Theatre in Chicago. The outer lobby of this theatre is very shallow and has much less ceiling height than the grand foyer into which it opens.

The lobby or grand foyer of the Allen Theatre in Cleveland is in the form of a rotunda. It is shown in the photograph at the bottom of page 13. The circular form was adopted in this instance to overcome difficulties that were presented by the conditions. It is forty feet in diameter at its base with a twelve-foot wide passage back of the columns on the mezzanine for circulation. Stairways leading to the balcony are provided on either



*Outer Lobby of The Capitol Theatre, New York City.
Thomas W. Lamb, Architect.*

side of the rotunda. On the orchestra floor, to the right of the rotunda, a tea room has been planned in such a way that people seated in this room can view the performance while being served.

The grand foyer of the Tivoli Theatre, Chicago, is, I believe, the largest in the United States in all of its dimensions. The view shown on page 12 was taken from the head of the staircase at the inner end of the lobby looking toward the door which opens into the grand foyer from the outer lobby. It shows the space over the outer lobby which is used as a lounge. From a planning standpoint, this grand foyer or lobby is excellent. Fortunately, there was in this case, nothing to prevent making a highly effective room, for the entire building is devoted to the purposes of the theatre and the conditions that usually restrict the lobby, either in its horizontal dimensions or in the matter of ceiling height, were not encountered here, as they were in the case of each of the other theatres illustrated, for

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*Grand Foyer of the Tivoli Theatre, Chicago, Ill.
C. W. & George L. Rapp, Architects.*

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there are office buildings connected with these theatres. The circulation around the colonnade above the lobby floor is very well arranged. The connection of the various levels under the balcony overlooking the grand foyer is very effective. This lobby is about forty-five feet wide and one hundred and fifty feet deep in its base dimensions.

The grand foyer or lobby of the Capitol Theatre in New York is shown in the lower illustration on page 10. Notwithstanding the fact that this grand foyer opens into the largest motion-picture theatre in the world, it is not as large as that of the Tivoli Theatre. The grand foyer of the Capitol Theatre I consider the best I have ever seen; its plan is perfect. It is only about thirty-five feet deep and eighty feet wide in its base dimensions. The staircase of Italian white marble, directly on the axis of the outer lobby and of the mezzanine, creates a highly favorable impression upon patrons entering the theatre. It has been my experience that most people rather dislike to take seats in the balcony, not because they dislike climbing stairs, but because of the feeling that if they do so, they are classing themselves as among the cheaper patrons of the theatre. However, in the case of the Capitol Theatre, I understand that the attractiveness and impressiveness of this stairway, together with its convenient location and its connection with the mezzanine, overcome this feeling and dispose patrons favorably toward balcony seats. This is a distinct advantage, for there are always many people who will, under any circumstances, occupy seats on the orchestra floor even at an advanced price.

Since the grand



*Outer Lobby of The Allen Theatre, Cleveland, Ohio.
C. Howard Crane, Architect.*

which the arrangement of stairs that has worked out so well in the Capitol Theatre in New York could not be applied, even though the size of the grand foyer is about the same in both cases. Reasons for this will be indicated clearly in one of the later installments of this article, in which I shall show diagrams setting forth various conditions met with in planning.

The lobby of the State Theatre is, nevertheless, very effective and very well planned. The stairs are at each end of the lobby and therefore allow good handling of the crowds, insofar as the overflow or waiting patrons use the right hand stairway, while the left hand stairway is used for egress during performances.

What I consider the chief advantage of the grand foyers of the Capitol and State Theatres is the suc-

cessful location of the main stairs. In the Tivoli Theatre, Chicago, though the conditions have been well met, the stairs are farther from the entrance than is quite desirable. I cannot see any better way this particular problem could have been handled under the conditions.

The sizes of the stairway in a theatre lobby must be figured in accordance with the requirements of various ordinances based on the seating capacity. As (Con. on page 31)



*Rotunda of The Allen Theatre, Cleveland, Ohio.
C. Howard Crane, Architect.*

PENCIL POINTS



*Linoleum Block from Which the Print
at the Left Was Pulled.*



Linoleum Print by Arthur Crisp.

THE MAKING OF LINOLEUM PRINTS

BY ARTHUR CRISP

THE simple process of carving a design on a piece of linoleum, inking the surface and pressing a piece of paper down on it, is capable of producing such attractive results that it is not surprising that the making of linoleum prints has been taken up by so many.

Since the essentials are a knowledge of composition and of drawing, many architects and draftsmen, as well as men engaged in other branches of art work, have found the making of these prints an agreeable diversion. The technique is so simple that this work may be taken up in one's spare time and satisfactory results obtained without having to overcome any serious difficulties. For printing cards to send to one's friends on special occasions and for making prints that will serve as presents of an individual character, this process is particularly good.

In making prints of this kind, I have found that certain ways of working give me the best results and it may be that these methods may prove helpful to those taking up this process.

Though the design may be drawn on the surface of the linoleum with a pencil, it is more satisfactory to paint the surface with white watercolor before drawing on it; and it is usually better to make the drawing on paper and transfer it to the whitened surface of the linoleum. This gives a design in black and white which can be seen clearly during the process of carving. The way I like best of all, however, is to paint the surface of the linoleum with black watercolor, then to rub white pastel on the back of my paper drawing of the design and to transfer it by laying the paper on the linoleum and tracing the lines with a hard pencil. As I cut away the white portions I can judge the final effect, as the

parts of the surface that remain are black, as those parts will appear in the finished print.

I use battleship linoleum and it is better that it should be fresh enough to be rather soft and springy, as it not only carves better but prints better than when it is hard.

In carving the design one may use either a penknife or wood-carving tools; the former has a quite different technique from the latter and produces a quite different effect. Among wood-carving tools are chisels of different sizes with which the large spaces can be cleared quickly. It may be well to say at this point that it is important to carve the large white spaces deeply.

In making blocks for this kind of printing, one must not attempt too much,—must not try for effects that the medium does not lend itself to. The best results are obtained by using a broad simple treatment.

Either printer's ink or artist's oil colors may be used in printing from such blocks. A little linseed oil should usually be added to the printer's ink to reduce it to the proper working consistency. This ink can be had in a great variety of colors in col-

lapsible tubes. If artist's oil colors are used and are found too oily, they should be spread on a piece of white paper until some of the oil has been absorbed, then scraped off with a palette knife. This process may be repeated until enough of the oil has been removed to bring the color to the right working consistency.

The color is applied to the block by means of a roller. A printer's ink roller is best for this purpose but a rubber roller, such as is used in mounting photographs, will serve the purpose. The roller must, however, be wide enough to extend across the whole width of the block. The color



Linoleum Print by Arthur Crisp. Vermilion on Creamy White Paper. Size, overall, 6½x7½ in. This design is especially effective in black on vermillion paper.

PENCIL POINTS



*Linoleum Block from Which the Print
at the Left Was Pulled.*



Linoleum Print by Arthur Crisp.

PENCIL POINTS

may be placed on a piece of glass, slate, an etching plate, or any other non-absorbent smooth surface and spread by running the roller back and forth over it until the roller is evenly and thinly coated with the color, after which the roller is run back and forth a few times over the surface of the block until the high parts have been properly coated with color. It is usually necessary to make two or three impressions before one can decide upon the proper consistency of the color. Also it may be necessary to make two or three impressions before one gets the best results in pulling the proofs.

Much depends upon the choice of the color of the ink and of the color and texture of the paper used, their suitability to the design and their pleasing character being important factors. I seldom use black on white.

Many highly suitable and attractive papers among those of Japanese manufacture can be had in a great variety of textures and colors. Some that have little flecks of gold on them are especially interesting; also crayon papers are excellent as are many other kinds. The main points to keep in mind in regard to the paper are that it should be of good texture and should not have too hard a surface.

I usually try out my blocks with different combinations of ink and paper. The print from which the illustration on page 15 was made is in a rich red on a creamy white paper, but I like this design best printed in black on a Chinese vermilion paper that has little flecks of gold on it—a color which would not, however, reproduce well in an illustration. I have some prints from this block in a cool blue-green on creamy white paper and they are very pleasing to me.

Though a print in black on white of the design shown on page 16 has been used for the purpose of illustration, I consider the most effective way in which this design has been printed is the one that is in black ink on vermilion paper flecked with gold. I have also a very effective print from this block in Venetian red on bright yellow paper. The design shown on page 14 looks best, I think, in black ink on some kind of gray paper. I have found it pleasing on light gray pa-

pers that shade toward lavender, green or blue. The bird design on this page has worked out best in Chinese vermilion on creamy white paper, while the card shown at the bottom of this page looks best, I think, in black on a paper of the Chinese vermilion color, flecked with gold.

Impressions may be pulled by any one of several methods. The best way is to use an etching press, laying the paper down first and placing the block on top of it. A screw letterpress may be used. It is said that some men have succeeded in making good impressions by running the linoleum block and the paper through a clothes wringer, but this seems to be a rather uncertain method. It is perfectly possible to make impressions from a small block by rubbing the paper down on the inked surface of the block with the handle of a spoon.

Several colors can be used in combination in making linoleum prints very much as they are used in printing from wooden blocks. This requires a separate plate for each color that is to appear in the finished print—one plate showing, say, all the parts that are to be in red and another the parts that are to be in brown, etc. An impression is taken on the paper from each of these plates in turn, care being exercised to have the paper and plate match or "register" each time, so that the colors will not overlap. In making a set of plates for a design to be

printed in a combination of colors, it is well to first make a key plate showing the entire design as though it were to be printed in a single color and to print with this plate on the various pieces of linoleum to be used, making the separate color plates by carving away all of the design excepting the portion that is to appear in the color for which the block is intended in each case. This will prove a great help in making color plates that will match.

Though, as pointed out above, the blocks should not fail to register through carelessness either in the making of the blocks or in the printing, the blocks may be so designed that the colors will overlap at the edges to produce a desired effect. If this is done it must be as the result of careful study to make it effective.



Linoleum Print by Arthur Crisp. Chinese Vermilion on Creamy White Paper, Size, overall, 5½x 2¼ in.



Linoleum Print by Arthur Crisp.

A VOCABULARY OF ATELIER FRENCH. PART IV

BY RAYMOND M. HOOD

This is the fourth installment of a vocabulary which Mr. Hood, Architecte Diplômé par le Gouvernement Français and Chairman of the Committee on Architecture of The Beaux-Arts Institute of Design, is preparing especially for this journal. It will be of special value to students in the ateliers in this country as well as to those who may later study at the Ecole des Beaux Arts in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier. As it is believed that an attempt to indicate the pronunciation would be futile, no such attempt is being made here; the pronunciation should be learned from someone who speaks French correctly.—Ed.

F (Continued)

- Frise: *n. m.*; *arch.*, frieze.
Frotter: *v.*; to rub; *arch.*, to transfer a drawing by rubbing.
Frottoir: *n. m.*; *arch.*, an implement of agate for rubbing drawings.
Fumoir: *n. m.*; smoking room.
Fusain: *n. m.*; a charcoal for drawing.

G

- Gâcher: *v.*; to do badly or negligently, to ruin.
Gâchis: *n. m.*; a thing or a situation that is confused or spoiled, a mess.
Gaffe: *n. f.*; an unfortunate happening or remark, a break.
Gaga: *n. m.*; a childish old man.
Gaillard: *n. m.*; a vigorous determined man.
Galbe: *n. m.*; *arch.*; the entasis of a column, the contour of a vase, statue, etc.
Galette: *n. f.*; a flat cake ordinarily made of flour, butter and eggs; *slang*, money.
Galetteux: *adj.*; *slang*, wealthy.
Garçon: *n. m.*; boy, young man, bachelor, waiter.
Garçonnière: *n. f.*; a bachelor apartment.
Gardien: *n. m.*; gardian, porter; at the Ecole des Beaux Arts, the "gardiens" have direct charge of the students.
Gargote: *n. f.*; a cheap, dirty restaurant.
Gargoter: *v.*; to cook badly.
Gargouille: *n. f.*; a gargoyle.
Gars: *n. m.*; *slang*, a fellow, a young man.
Gobé: *n. m.*; an easy mark, a credulous fellow.
Godet: *n. m.*; a small vessel or glass without pedestal; a dish for the mixing of colors.
Godiche: *n.* and *adj.*; awkward, stupid.
Gomme: *n. f.*; mucilage, erasure.
Gonflé: *adj.*; swollen.
Gouache: *n. f.*; Chinese white, color mixed with Chinese white, *i.e.*, solid color.
Goujat: *n. m.*; a filthy, disgusting man.
Gourd: *n. m.* and *adj.*; *slang*, imbecile.
Gourmand: *n. m.* and *adj.*; a person who eats good food to excess.
Gourmet: *n. m.*; a connoisseur of wines.
Goût: *n. m.*; taste, refinement.
Gouttière: *n. f.*; gutter on a roof.
Grand'Chose: *n.*; used negatively only, as "*pas grand'chose*"; not much, of little value.
Gratte-cul: *n. m.*; *slang*, an ink erasure.
Gratter: *v.*; to scratch, to scratch out, to rub out.
Grattoir: *n. m.*; a pen knife made especially for scratching out.
Grecque: *n. f.*; *arch.*, a Greek fret.
Gredin: *n. m.*; a vile person, a criminal.
Grenier: *n. m.*; roof space, loft.

- Grille: *n. f.*; a grill.
Grisaille: *n. f.*; a style of painting in which only gray tones are employed, in imitation of sculpture.
Griser: *v.*; to intoxicate.
Grisette: *n. f.*; a coquettish working girl.
Grossier: *adj.*; vulgar, indelicate.
Gueuler: *v.*; *slang*, to talk too much, to yell, to shriek.
Gueuleton: *n. m.*; *slang*, a sumptuous repast, a blow-out.
Guichet: *n. m.*; a small opening in a door or wall, a wicket.
Guignard: *n. m.*; an unlucky person.
Guigne: *n. f.*; hard luck, misfortune.
Guillochis: *n. m.*; *arch.*, the Greek guilloche.
Guirlande: *n. f.*; garland, swag ornament.

H

- Habile: *adj.*; clever, skillful.
Habilité: *n. m.*; cleverness, skillfulness.
Habiter: *v.*; to dwell in, to live in.
Habitue: *n.*; a person who frequents a certain place.
Habituer: *v.*; to get the habit, to accustom.
Hacher: *v.*; to cut up in small pieces; *arch.*, to hatch in.
Hyperbole: *n. f.*; a figure of rhetoric which consists of exaggerating to produce an impression; *in geometry*, an hyperbole.

I

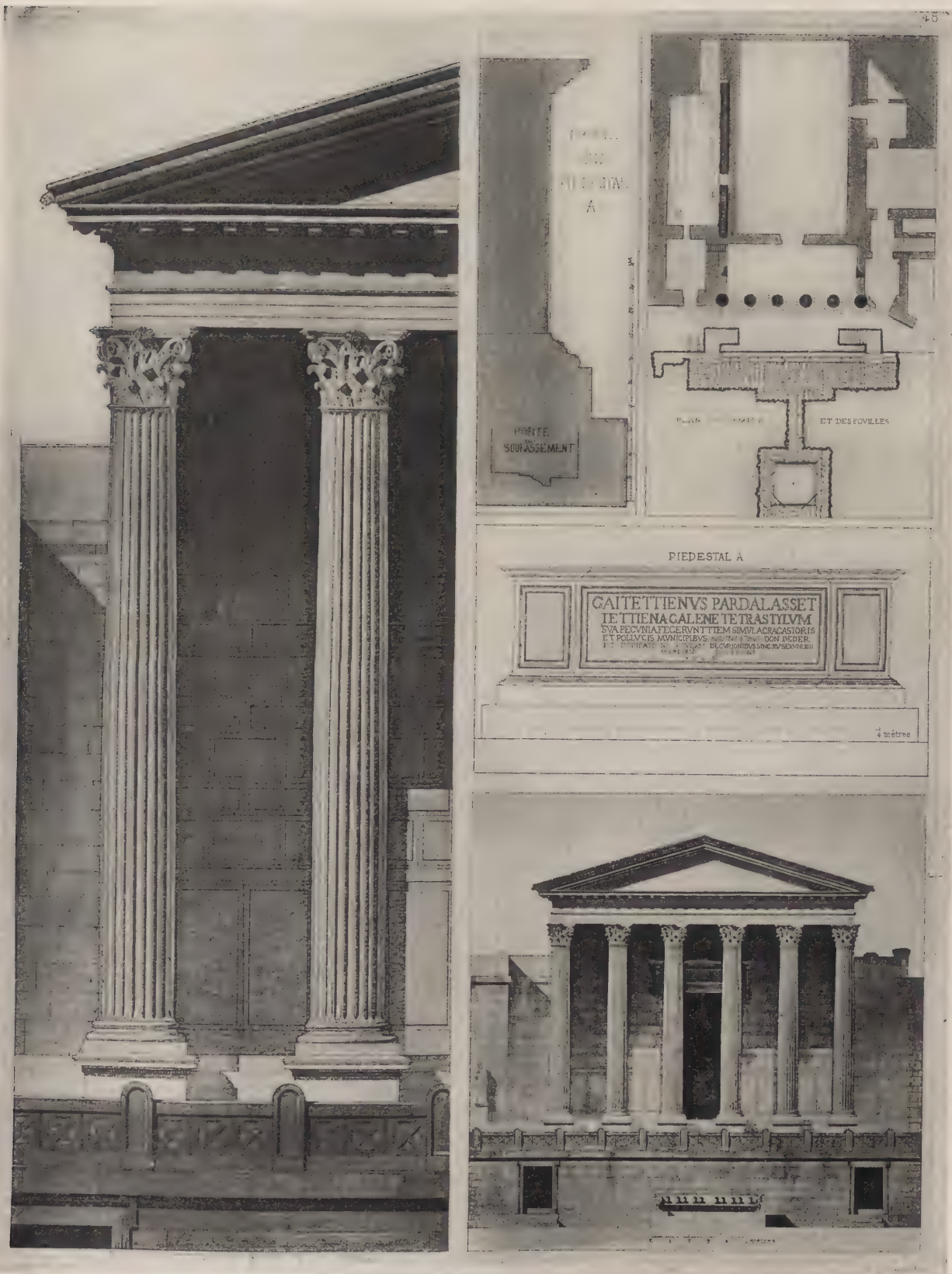
- Immeuble: *n. m.*; a property that is not furnished, as a piece of land without buildings or a building without furniture.
Infect: *adj.*; repugnant, giving out foul odors.
Inspirer: *v.*; to inspire.
Intrados: *n. m.*; the interior surface of an arch or vault.

J

- Jardin: *n. m.*; garden.
Jardin à L'Anglaise: *n. m.*; an informal garden in the English style.
Jardin à La Française: *n. m.*; a formal garden in the French style.
Jardin d'Hiver: *n. m.*; a winter garden.
Jardinier: *n.*; a gardener.
Jaspiller: *v.*; to talk, to gossip.
Jugement: *n. m.*; judgment.

L

- Lâche: *adj.*; languid, lacking in courage, vile; *n. m.*; a coward, a poltroon.
Lâché: *adj.*; done carelessly or with neglect.



DETAILS OF THE TEMPLE OF MINERVA AT ASSISI.
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

A number of details of the Temple of Minerva at Assisi are shown on the other side of this sheet, from a restoration by Louis Bernier. Other details of this building were shown on Plate XXI in the June issue of this journal. On the back of that plate will be found information regarding the building.

PENCIL POINTS

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PLATE XXVI



ARCH OF TRAJAN
TIMGAD

PENCIL DRAWING, ARCH OF TRAJAN, TIMGAD, BY AUSTIN WHITTLESEY.

On the other side of this sheet is an admirable pencil drawing by Austin Whittlesey of the Arch of Trajan at Timgad, an unusually interesting example of Classic architecture in North Africa. This drawing represents the arch as restored. Mr. Whittlesey made a trip to Spain, Italy and Tunisia a few years ago.

PENCIL POINTS

VOL. III, No. 7

PLATE XXVII



RENDERING IN PENCIL AND WATER COLOR.

TABLE IN THE LOUIS XVI MANNER. THEO. HOFSTATTER & CO., DECORATORS

A pencil drawing rendered with light washes of color to present the design of a decorative piece of furniture is shown on the other side of this sheet. The table which it represents is designed on historic lines characteristic of the period of Louis XVI and the presentation effectively shows the piece in a way to give the decorator's client a clear idea of it.



PENCIL DRAWING BY WILLIAM L. MILLER
OF A DESIGN FOR A GALLERY IN A LARGE COUNTRY HOUSE.

The pencil drawing shown on the other side of this sheet was made for the purpose of presenting a suggestion for the decorative treatment to the owner of the house. It represents a design for the gallery upon which the main rooms of a large country house open. Through the arch at the left, is seen a portion of the great hall and at the far end of the room a glimpse is had of a tower staircase. The materials represented in this sketch are: walls of Cato stone; adze-hewn ceiling beams of oak with rough plaster between; floor of flagstones with inserts of slate for accent. The drawing is largely in lead pencil with touches of lithographic pencil for the strongest black.

ARCHITECTURAL DETAIL PART XV

BY JOHN VREDENBURGH VAN PELT

This is the fifteenth instalment of an article in which Mr. John Vredenburg Van Pelt, formerly Professor in Charge of the College of Architecture, Cornell University, Architecte Diplômé par le Gouvernement Français, and author of "Essentials of Composition," will discuss the designing of good architectural detail and point out the means by which the ability to produce good detail can be developed. Reproductions of detail drawings from some of the best architectural offices will accompany this article and the publication of this series of drawings will be continued after this discussion of the subject has been completed—making a valuable feature of this journal indefinitely.

IN THE building industry, use of slate is not confined to roofing. The stone makes a very beautiful flooring which in finish may be smooth and even, suitable for a Colonial hall, or rough and rugged, in harmony with the irregularities of a Gothic courtyard. It has been much used for the treads of steps but a harder material is advisable for concentrated traffic.

The even black of dark slate makes it an excellent foil for inlays of metal, particularly of brass. The beauty of some of the old monumental brasses with their graven and blackened lines portraying departed dignitaries of the Church was immeasurably enhanced by the background in which they were set. For such uses the slate should be hard, deep bed slate of even texture. Be sure that samples have not been blackened artificially by a surface stain. Wet them and notice whether there are clouds (they look like a mackerel sky) ribbons or definite nodules. The ribbons show blacker when the slate is wet and being of a harder material do not wear down evenly with the surrounding surface. Flint nodules (they resemble pebbles embedded in the slate) will, of course, not wear evenly and their lighter color is objectionable. It would be expensive to select a large surface of slate entirely free from clouds but not more than 15% or at most 25% of the actual area should contain them. That part of the floor subjected to great

est wear should be clear in order that it may last.

The rougher flagging is composed of other stones, bluestone for instance, as well as slate. If slate is used, care must be exercised that there are no seams which in winter will split the flags into thinner laminations and break up the flags. The old, irregular flagging has become quite in vogue of late, particularly for country house work. A charming example with grass joints can be seen in the illustration of the Charles H. Sabin house at Southampton, L. I., Cross & Cross, Architects (see page 29). This view also shows an attractive heavy graduated slate roof and some good rough stucco, all in keeping one with the other. Even the planting is well done and reminds us how important

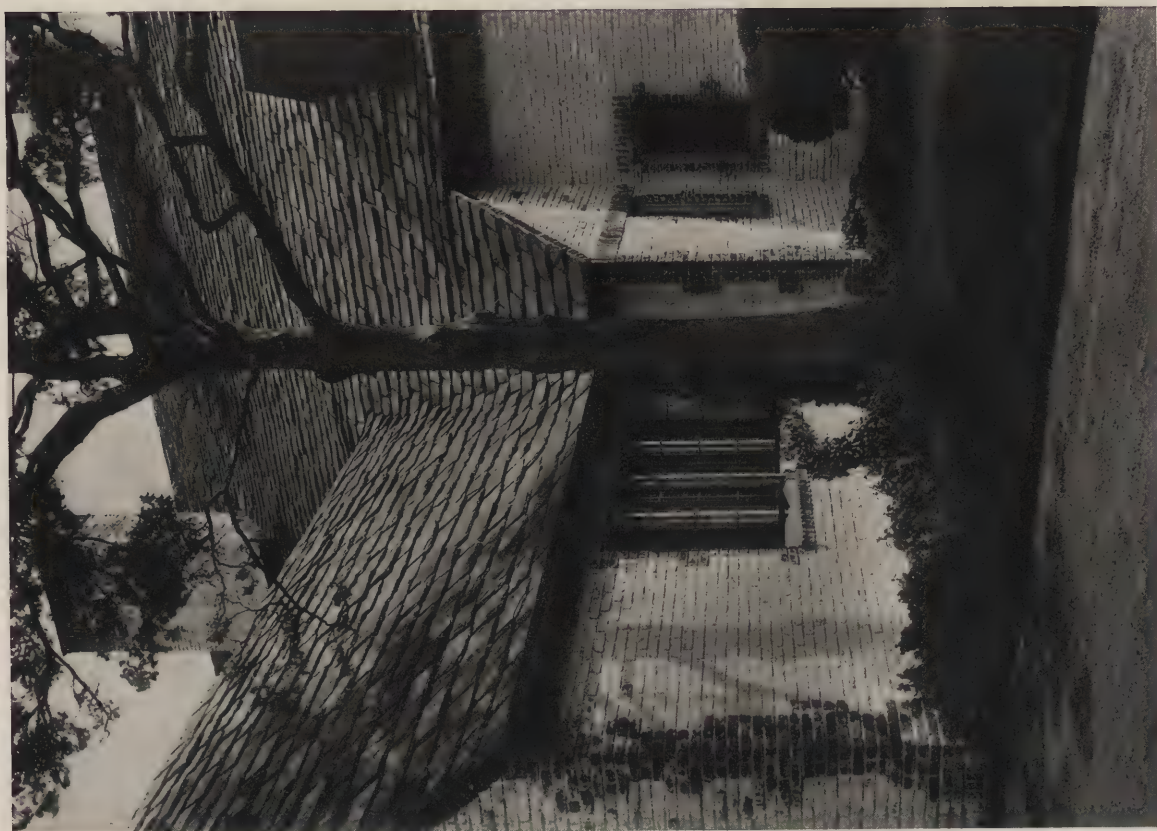
it is that all parts of a composition exhibit like characteristics.

In this particular walk the larger flags have been placed along its edge, a very natural and logical method. A defect of much modern irregular flagging lies in breaking the stones up into pieces that are too small. This always looks forced and suggests that it has been done intentionally. In old flagging small stones were utilized from necessity but not in preference to the larger and better ones and no sane builder would have broken up a large stone.

The size of grass joints is another point in which we moderns often mistake defects for beauty. Except where stepping stones are set some dis-



Stone Steps in Gardens for Mrs. Arthur Scott Burden, at Jericho, L. I. John Russell Pope, Architect.



Details of House for Paul Moore, Esq., at Morristown, N. J. H. T. Lindeberg, Architect.



*Detail of House for Allan Lehman, Esq., at Tarrytown, N. Y.
John Russell Pope, Architect.*



*Detail of House for Charles H. Sabin, Esq., at Southampton, L. I.
Cross & Cross, Architects.*

PENCIL POINTS



*Detail of House for Allan Lehman, Esq., at Tarrytown, N. Y.
John Russell Pope, Architect.*

PENCIL POINTS

tance apart, a good old walk would have been as closely joined as possible without undue expense of cutting. The grass should be well trimmed and kept within bounds. In the flagging of the Allan Lehman house (page 29) Mr. Pope has laid out the flags with a reasonable joint but the grass has been allowed to spread. It would not be comfortable to walk over, moreover to my way of thinking, it has become too heavy for the stone-trimmed architecture and for the rest of the planting. Do not fail to note the charming finish of the adzed timbers, the quaint little column at the corner of the projecting wing and the flowing line of the ridge.

The gable on page 30 is another part of the same house in which the pinning of the timbers is apparent while their surface treatment can be studied to even better advantage. Adzing in these days of machine-cut work is almost a lost art. When done it is usually either too regular or too execrably bad. Not even a passable workman of olden times would have been caught perpetrating the kind of things we point to with pride. The Lehman house has no such defects and this gable is almost perfect in the reasonableness of the workmanship and in the subtle balance maintained between the different kinds of finish of the free carving, timber work, stucco, stone and slate. The slate, by the way, presents a good example of a cemented gable edge.

Another admirable piece of work of which Mr. Pope may be proud, is the flight of stone steps from the sunken garden to the upper terrace of the house for Mrs. Arthur Scott Burden, at Jericho, Long Island. The treads vary in thickness from some two to five inches, and are supported on small stones that have the appearance of being laid up dry. This stone work forms the transition between a rustic portion of the garden and the more conventional and refined detail of the Colonial house, a difficult thing to gauge with nicety.

I cannot close this talk about slate without reference to the Paul Moore house at Morristown, of which Mr. H. T. Lindeberg was the architect (two views page 28). These roofs strike just the right note for the quality of the unusually simple and agreeable brickwork, whitened in the body of the wall and set off with red irregular coinings and soldier bands. The valleys are unusually fine pieces of workmanship. As rough a roof as the one that gives us so much pleasure on the Lehman house, would appear out of place in this more restrained design.

The thoughtful observer will perceive at once that in each of the buildings shown, the harmony of the different parts is the quality that brings repose and satisfies. Unquestionably faulty composition ruins a design; but lack of harmony mars its beauty, teasing and distressing us through the antagonism of its unrelated elements. It brands its author with an uglier mark than that of being uneducated and shows him to us a man without artistic perception, devoid of taste.

Note—In the next installment of this article, Mr. Van Pelt will discuss the texture of brick work, showing illustrations of interesting examples.—Ed.

MOTION-PICTURE THEATRE DATA

(Continued from page 13)

a rule, the width of the main staircase, as in the Capitol Theatre, is figured to equal the nominal width of all the staircases leading from the upper portions of the theatre. If, for instance, there is one stairway six feet wide in the clear on each side of the auditorium leading to the mezzanine, and the main staircase is a single flight, like that in the Capitol Theatre, it is necessary to make this main stairway twelve feet wide. In the case of an arrangement of stairs like that in the grand foyer of Loew's State Theatre, each of these stairs would be six feet wide in the clear. The height of risers and width of treads is also covered by ordinances which usually provide that risers shall not exceed seven and one-half inches in height and ten and one-half inches in width of tread. In many cities ordinances require that where stairs are over eight feet in width, a centre rail shall be provided dividing the stairs as shown in the photograph of the grand foyer of the Capitol Theatre. It is further provided by such ordinances that these rails shall terminate at the head of the stairs in a standard not less than six feet in height, properly secured, the object being to minimize the danger of a crowd becoming jammed on the stairs in case of an emergency. While complying with this regulation it is possible to place on the top a lighting fixture in the form of a lantern or any other suitable shape and thus do away with the unfinished appearance of the plain standard.

A SCRAP BOOK OF ORNAMENT

THERE has recently been added to the collection in the print room of the Metropolitan Museum of Art a group of three hundred sixty engravings by and after Jean Pillement, of which two score are printed in colors.

Some of the most interesting characteristics of Pillement's work are well brought out in an article by William M. Ivins, Jr., Curator of Prints, in the Bulletin of the Museum for June. From this article we quote the following:

"In his own time possibly most famous for his landscapes, which despite their charm were but little more than pastiches of seventeenth-century Dutch painting, he is most valued to-day by the few who know his work on account of the many designs which he made for the decoration of walls and of textiles. Of all the many men who specialized in the minor arts of decoration during the eighteenth century Pillement stands out because of the sheer delight which lies in his completely nonsensical work. Groups of flowers or seed pods are arranged in marvelous patterns, which are the more entrancing because they have no apparent rhyme or reason.

"Barques of flowers and leaves pursue their courses in flat defiance of all the rules of physics and experience. Chinamen fish from pagodas perched on ladders rising from most fragile petals. Children play gravely comic games. And everything is beautifully mannered."

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\$100,000 PRIZE COMPETITION.

A COMPETITION that is of unusual interest to the profession not only because of the large amount offered in prizes but also because of the opportunity it affords to produce a distinctive solution of an interesting problem, has been announced by the Chicago Tribune, which is offering \$100,000 in prizes for designs for a building which is to be the new home of the Tribune. This offer was made on the seventy-fifth anniversary of the founding of that newspaper. The competition will open August 1, 1922, and will close November 1, 1922, and will be conducted in accordance with the regulations of the American Institute of Architects. The jury of award will be as follows: Chairman, Alfred Granger, A. I. A.; Col. Robert R. McCormick, co-editor of The Tribune; Joseph Medill Patterson, co-editor of The Tribune; Edward S. Beck, managing-editor of The Tribune; Holmes Onderdonk, manager of Tribune real estate. Associated with the jury will be an advisory committee comprising two members of the Chicago city council, two members of the Chicago plan commission, and two members of the North Michigan Boulevard Improvement Association.

The prize money will be distributed on the basis of the following scheme of honorariums: A prize of \$50,000 will be awarded for the design selected by the jury of award. A prize of \$20,000 will be awarded for the design ranking next in the jury's selections. A prize of \$10,000 will be awarded for the design ranking third. Ten prizes of \$2,000 each will be awarded to ten architects to be especially invited to enter into this project.

The site of the new building is the vacant area fronting the present Tribune plant. It is bounded by North Michigan Boulevard on the west, by Austin Avenue on the South, by a wide alley on the North. It comprises 13,500 square feet. This site is one of the most significant and inviting to be found anywhere.

The motive which actuates The Chicago Tribune in conducting this competition is to build a monument of enduring bauty which shall be at once a glory to journalism and to the city. The Tribune seeks artistic nobility and business effectiveness in the design of this building.

The conditions of the competition are so liberal in every way and the opportunities to create an interesting design so great that it may well be hoped that the winning design will mark a distinct advance in the architecture of commercial buildings of the highest type.

A far-reaching effect of this action on the part of The Chicago Tribune will be, unquestionably, the awakening of a great deal of interest in architecture on the part of the public and a new appreciation of the value of architectural character in the buildings of our great cities. Nothing could be more stimulating than such a competition.

OFFICERS ELECTED AT A. I. A. CONVENTION.

AT THE Convention of The American Institute of Architects, held in Chicago, June 7, 8 and 9, the following officers were elected: President, W. D. Faville, San Francisco, Cal.; First Vice-President, E. J. Russell, St. Louis, Mo.; Second Vice-President, R. D. Kohn, New York City. The following new directors were elected: William Emerson, Boston; B. W. Morris, New York City, and William L. Steel, Sioux City, Iowa. William Stanley Parker, Boston, was re-elected Secretary and D. Everett Waid, New York City, was re-elected Treasurer. Herbert Hoover was elected to Honorary Membership in the A. I. A.

PERSONALS.

C. HOWARD CRANE AND KENNETH FRANZHEIM, Architects, have opened an office in the Chronicle Building, Houston, Texas.

J. W. DOLLIVER, Architect, formerly located at 114 Sansome St., San Francisco, has removed his office to 855-7 Monadnock Building.

ROBERT L. KANE AND MONROE R. SANDEL have formed a co-partnership for the practice of architecture under the firm name of Kane & Sandel, with offices at Room 1320, 64 West Randolph St., Chicago.

SERAPHIN A. CYR, Architect, has removed his office to 662, Rue Fabre, Montreal, Canada. He was formerly located at 1270 Chabot St.

THEO. STEINMEYER has opened an office in the Title Guaranty Building, St. Louis, for the practice of architecture.

AUGUST LUX, Architect, has removed his offices to 22 Putnam Street, Albany, N. Y.



Detail of Entrance to House for S. L. Depew, Esq., at Bloomfield Hills, Detroit, Mich. Electus D. Litchfield and Rogers, Architects. See Detail Drawing on page 38.

PENCIL POINTS

PHILADELPHIA HOUSING COMPETITION.

NOTING a well marked tendency on the part of the people of the city to adopt as a standard of living accommodations, the three-room flat, increased sometimes by the addition of a kitchen or kitchen cabinet, in place of the type of dwelling which gave Philadelphia its claim to the title as the city of homes, the Philadelphia Real Estate Board is calling upon architects to collaborate with it to the end that a type of house or apartment may be invented that will forestall the ultimate results of this tendency. This call for co-operation is being made by means of a competition which will close at noon July 12, 1922. Two prizes are offered by the Philadelphia Real Estate Board, each to be an appropriately designed medal to be awarded as a first and second prize in the judgment of the jury of award. The jury will be as follows: D. Knickerbacker Boyd, Architect; Charles H. Whitaker, Editor of the Journal of the American Institute of Architects; M. B. Medary, Jr., Architect; Daniel Crawford, Jr., President of the Philadelphia Operative Builders' Association; John G. Williams, President of the Philadelphia Real Estate Board.

The program calls for the planning of a group of houses on a city square, 400x400 feet. The requirements of the families living in this group are outlined in a clear manner. The rent is not to exceed 25% of the earning capacity of the family, and it is stated that the design based upon low earning capacity will receive special consideration. Those desiring to enter the competition should communicate with John Irwin Bright, Otis Building, Philadelphia, Pa.

HOME GARDEN COMPETITION.

WITH the object of stimulating interest in the artistic development of the small home garden, The Society of Little Gardens has announced a competition to be judged from photographs of actual small gardens. This competition covers three classes as follows: Class I,—Treatment of space not less than six hundred square feet (20x30), or more than 5,000 square feet (one-eighth of an acre approximately). Class II,—Photograph of one object of interest in the garden and its setting, as described in Class I. Class III,—Photograph of City Housefront, with artistic arrangement of plants, whether in window boxes, wall vines, or potted plants, as described in Class I. The prizes are as follows: Class I, \$50; Class II, \$15; Class III, \$15.

The photographs will be judged by a jury composed of three experts, Miss Harriet Sartain, Chairman, Dean of the Philadelphia School of Design for Women; Miss Elizabeth Leighton Lee, Director of the School of Horticulture for Women, Ambler, Pa.; and Miss Elizabeth Wilson Fisher, Member of the Lantern and Lens Guild of Women Photographers, Philadelphia. The competition closes at noon, October 16, 1922.

Those interested should apply for program of the competition to Mrs. Charles Davis Clark, President of the Society of Little Gardens, 2215 Spruce Street, Philadelphia, Pa.

THE PERKINS TRAVELLING FELLOWSHIP.

THE Perkins Travelling Fellowship in Architecture in Columbia University has just been won by Sotaro Y. Ohta. Mr. Ohta was born in Japan and received his preliminary education in his native country, but for the past several years has been engaged in architectural work in New York City. He entered the School of Architecture in Columbia University in 1914. He was awarded the Alumni Association Medal of the School for proficiency in advanced design in 1916. The same year he won fourth prize in the White Pine Competition. He was placed second in the 1921 competition for the Columbia Travelling Fellowship.

Beginning in September, 1921, he took a year of graduate study, at Columbia, where he received a degree of M.S. in Architecture. Mr. Ohta is connected with the office of McKim, Mead & White.



J. BURN HELME

J. BURN HELME is the winner of an Ontario Provincial Scholarship in Town and Regional Planning and Housing for 1922. Mr. Helme will leave early in the fall for Europe, where he will make an extensive tour through France. He will take lecture courses at the Paris Institute of History, Geography and Civic Economics, with which is affiliated the School of Civic Design. Extensive observations in the regions at present being rehabilitated in France are part of his program of study and he hopes to visit Great Britain and Italy. Mr. Helme is of the staff of Sproatt & Rolph, Architects, Toronto, Can.

He was born in Smith's Falls, Ontario, and attended the public schools and Collegiate Institute at that place, graduating with honor matriculation standing and a scholarship at Queen's University in Mathematics and English. He entered the University of Toronto in 1916, enrolling in the Department of Architecture, and graduated with the class of 1922, his studies having been interrupted by two years' military service. He was president of the University Architectural Club for the session of 1921-22.

COAST TO COAST.

THE travelling exhibition of sketches selected from among those submitted in the Birch Burdette Long Sketch Competition for 1921 is on its way from Dallas to San Francisco where it is scheduled to open on June 27 in the San Francisco Architectural Club, having gone from Coast to Coast. It will remain on exhibition in San Francisco during the early part of July and will then be sent back to New York, where the sketches will be packed and shipped out to those who submitted them, and with whose permission they have been shown at points in all parts of the country since the initial exhibition held at the rooms of The Architectural League of New York in the early winter, and the exhibitions held at Boston and Cambridge soon after. Reports show that this exhibition proved interesting everywhere and the publishers of PENCIL POINTS wish to express their appreciation of the co-operation of the Architectural Clubs and Educational Institutions and of the men who made this travelling exhibition a success.

QUERIES

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, Metropolitan Tower, New York City.

Question—Will you please inform me if any publication has been issued in which plans, photographs, and detail drawings are shown of the Pierpont Library, New York? Can you give me some particulars as to the methods adopted when rendering drawings (water color) in tempera? A. L. **Answer**—Replying to your inquiry relative to plans, photographs and detailed drawings of the Pierpont Library, New York, we believe you have reference to the Morgan Library, erected by J. Pierpont Morgan and designed by McKim, Mead & White. You will find much information concerning this building in the "Monograph of Work of McKim, Mead & White," published by the Architectural Book Publishing Co., New York. Replying to your second question, we do not believe you refer to real tempera but to the use of what are known in the trade as tempera colors, which are opaque colors with a solid body and usually come in little glass jars. Some of these colors tend to change color in drying and unless they are flowed on rather evenly, they may show water marks or spotting in certain parts. It is important to mix up a reasonably large quantity of the color that is to be used and to put it on rather wet, but so it will not run. Do not incline the board too steeply. Practice will be the best master. As to general advice about water-color rendering, we would suggest H. Van-Buren Magonigle's book on "Water-color Rendering," published by Charles Scribner's Sons, New York.

Question—Can you tell me the name of any book on stone detail, jointing, construction, etc., of stone work, anything that will be helpful in stone drafting. R. W. B. **Answer**—Replying to your inquiry, we have made an effort to find the name of such a book as you ask for, covering stone detail, jointing, construction or anything that would be helpful in doing cut stone drafting. It seems, however, that there is no such book. There are two books that may be of some interest to you, though not bearing on this particular subject. They are: "Marble and Marble Workers," W. G. Renwick, (Structural and decorative marbles of the world, their extraction and working.), 13 full pages of marbles in color—\$6.50 post-paid. Stone Publishing Co., New York City; and "Nash's Expeditious Measurer" (200 pages indexed tables showing cubic contents of any block of stone), \$3.00, Stone Publishing Co.

Question—Can you tell me where I can obtain information regarding the planning of Jewish Synagogues. A. E. N. **Answer**—We would suggest that you write to the Union of American Hebrew Congregations, Dutton-hoeffer Building, Cincinnati, Ohio, as they will undoubtedly be able to give you helpful information and references on this subject.

THE AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following items of news:

"Active work in all departments has been the order of the last month. A comprehensive description of the

work will doubtless be presented to you in the news letters from the heads of the two schools.

"We are all delighted that Miss Wadsworth's work on Roman Stucco Reliefs will probably be published shortly as Volume IV of the Memoirs. She writes in an interesting manner, and her illustrations are of considerable artistic as well as archæological interest. The publication should be of great credit to the Academy.

"Word has just arrived that the summer school is to be given up for this summer. We all think that this is a great pity, as Professor Grant Showerman, who was anxious to start the school, may not be able to do so a year from this summer.

"A hundred dollar contribution has come in from Mrs. August Heckscheer, for the purchase of art books in the library. Mr. Sebasti has promised to let us know on May 3rd how the Banca Italiana di Sconto is going to make its payments to us of the money tied up in that bank.

"Mrs. Stanford White, who has already helped to raise money for the purchase of art books, has offered to collect more money; she left Rome a day or two ago but I have written her to see if she cannot interest her friends in collecting \$175 for a subject card catalogue of the library. Some of the members of the faculty think this so urgent that they have already contributed \$125 toward the \$300 needed for the work. Senator Phelan of California, whom I wrote you about in my last news letter, is willing to start a campaign in California in behalf of the Academy when he returns there next fall.

"The King and Queen have consented to inspect the work of the academy on May 18th, if nothing unforeseen prevents them from coming.

"I am collecting samples of marbles and obtaining estimates for the Morgan and McKim Memorials, and I shall send them to Mr. Kendall before long.

"Mr. Mead writes that Mr. Henry Walters and his bride are in Europe. We hope that they will come to Rome. I wish they were going to be here on May 18, to help receive the King and Queen.

"The newspapers stated that Mr. Fairfax Harrison was in town. Both Prof. Lamond and I hunted through the hotels to find him but without success. The papers may have been mistaken.

"The archæologist Miss Van Deman is in town. She is a former Fellow of the Classical School before its consolidation with the academy.

"The Metropolitan Museum of Art has bought Mr. Jennewein's gazelle, which he modeled here while a Fellow of the Academy.

"There is a report that the Sermoneta Villa just back of the academy, with its wonderful view and its terraces, is to be a "swell" restaurant! If the report is true, the noise and confusion, both day and night, will be terrible for the Academy.

"Mons. Prof. Duchesne, Director of the French Archæological School in the Palazzo Farnese, died of pneumonia about a week ago. His death is a distinct loss to the archæological work. He was always most helpful to our students."

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NEW HAVEN ARCHITECTURAL CLUB.

RECENTLY at a special meeting of the Board of Directors of the Architectural Club of New Haven, Mr. Allen, architect, of New Haven, was unanimously elected President of the club in place of Louis L. Norton, resigned.

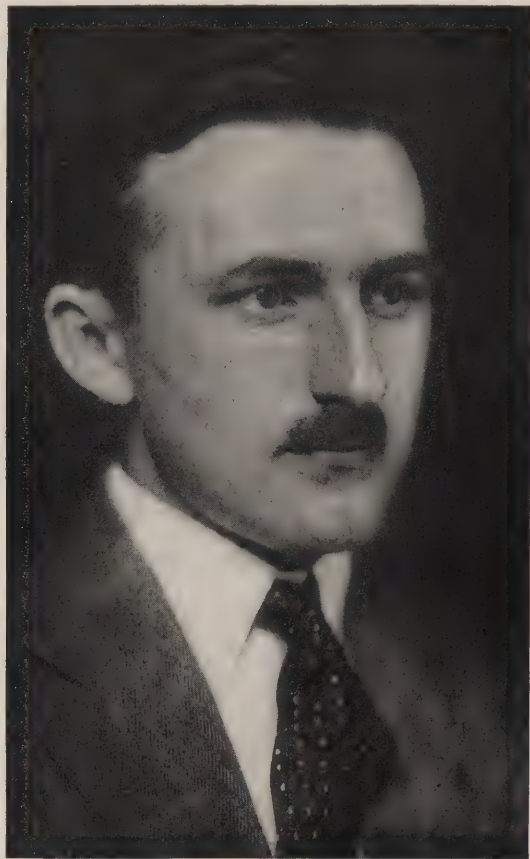
A. M. Thomas, who has been the efficient and zealous chairman of the entertainment committee and chairman of the nominating committee, was unanimously elected to the secretaryship of the club. Theodore O. Appel and Alfred W. Boylen, retiring president and vice-president, were unanimously elected members of the Board of Directors.

PITTSBURGH ARCHITECTURAL CLUB.

THE Pittsburgh Architectural Club program for June included noon luncheons as follows: June 8—The Pepper Box, Fancourt St.; June 15—The White Cat, 118 Sixth St.; June 22—The Pepper Box, and June 29—The White Cat. For Saturday, July 1, is scheduled a picnic which will be held at Linden Grove Park, on the Liberty Highway, from 1:30 P. M. to 1:30 A. M. There will be races, prizes, a ball game, and refreshments.

WILLIAM L. MILLER.

WILLIAM L. MILLER, one of whose pencil drawings is reproduced on a plate page in this issue, was born in a small town in Switzerland. He first studied in the National Museum and Art School. He then spent six years in London, first in the office of C. R. Ashbee, architect, from whom he learned much, then went into a partnership with a painter. This gave him an opportunity to sketch southern English country houses. Throughout his stay in London he studied in South Kensington Museum and School, with occasional trips to France and Northern Italy. Mr. Miller is connected with the office of P. W. French & Co., New York City.



WILLIAM L. MILLER.

LOS ANGELES ARCHITECTURAL CLUB.

A LETTER just received from the Los Angeles Architectural Club is so full of life that it would be a pity to reduce it to a formal news item, so here it is.

"I wrote you last October, telling you what a wonderful organization we are, and how quickly we were growing, and of all the things we planned to do. And now, after all these months, I feel the truth of that old saying, 'He that tooteth not his own horn, same shall not be tooted,' so here goes our history from where I left off last time:

"You will please note the fact that on April 13th last we were one year old, and as that is the most precarious year in the life of any infant, we are quite elated to find ourselves bigger and healthier than ever, and accordingly we yell louder than ever about ourselves and our plans. Of course, our membership has increased, now totaling one hundred and sixty-eight, but we hope to have twice this number at the end of our membership drive which has just opened. That is a hope, but it will grow into a fact, for the sun is just beginning to shine on our most cherished dream, our own club-house, designed and built by ourselves. At the last regular meeting a committee was appointed to arrange the details of the formation of a holding company to issue stock certificates to finance the building, the rental of which to the club and to kindred organizations, will net the stock-holders a good income. One-third of the membership have already pledged three thousand dollars, which will form the nucleus for a ten thousand dollar fund to be raised in the next few months, by means of the now famous 'drive' method. Every member is an optimist, so we will be in our new home by the end of the year. But that is getting into the future.

"As for the past, we have not wasted any time. The Christmas Smoker put us in a good humor for the new year. The luncheon to Mr. Goodhue, upon the occasion of his visit to Los Angeles in January, added a big dash of pep, for it showed what an influence for good in the architecture of the city the club can be. February was marked by the legislation which opened to disabled soldiers who are studying architecture, every resource of the club and all its privileges, without the payment of dues. In March we did our bit in helping to plan the Children's Educational Exposition. April saw the awakening of interest in the planning of the city and its rapidly growing environs, and from this beginning has grown a co-operation with the City Planning Commission, which promises a well arranged plan. May ushered in the City Plan Competition, which is going to bring out the best there is in the club, and the best ideas will be used by the Commission in its final plan. As for June—we stand on the brink of it, with our usual pep and optimism, and if you should ask us, we will admit that we are going to accomplish wonders, although we are not quite certain as yet what form our accomplishments will take. I will leave the details for your consideration in my next epistle, which will be written in my private office in our new club-house."

THE CODMAN COLLECTION

ADJOINING the print room at the Metropolitan Museum of Art is a special room in which the Codman Collection of books and prints of ornament have been made accessible to designers under conditions that are unusually favorable to study. Mr. Codman provided book cases, chairs, tables, a rug and framed pictures for this room, in order that the collection might be housed as nearly as possible as it would be in an architect's or interior decorator's own working library. The collection itself is of the greatest interest, for it was made by a practising architect and interior decorator who was also a bibliophile. It bears particularly on architecture and decoration in France, England and the United States in the Eighteenth and Early Nineteenth Centuries.

As the collection is intended for the use of designers and mature students it has been so arranged that they may have direct access to the books, and it is hoped that this will encourage many to "browse," a practice that should familiarize them with the collection.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION PART IV.

By OTTO GAERTNER

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Interior Swimming Pools (Continued)—Adequate ventilation must be provided; a complete change of air every six to twelve minutes being good practice. The ideal method is to bring heated fresh air into the room at the bottom of the outside walls, and to exhaust it at the top. Care must be taken to eliminate draughts.

The water in the pool should be fit to drink. The demand for clear, transparent water is such that the use of filters is essential. Sometimes the water is also sterilized by the ultra violet ray process or by the use of ozone or liquid chlorine. The number and capacity of the filters depend upon the volume of water to be cleansed and the time in which it must be done. They must be connected to the water supply lines of the building, and to the circulation line or lines from the pool, and they must be connected to the pump and heater from which the water is delivered to the pool. They must also be connected to the sewer to discharge the water which is used to clean them when the water passing through them is reversed for this purpose. There is economy in refiltering the water after it has been used. Both the cost of the water and part of the heating are saved, but if the water is refiltered often, its degree of alkalinity is depreciated so that lump alum and soda must be used in connection with the filters to overcome this condition. The necessity for changing the water depends upon the use to which the pool is put, its size, and the efficiency of the conditioning apparatus.

The water is heated and reheated in most cases by passing through a steam-heated hot water heater, utilizing either live or exhaust steam; the capacity being calculated according to the number of degrees that the water must be raised in temperature and the rapidity with which it must be done. Sometimes a system of injecting steam into the supply lines of the pool or into the pool itself is used, but such a system is sometimes noisy and unsatisfactory. For comfort and enjoyment, the water should be maintained at a temperature of seventy to seventy-five degrees Fahrenheit. Proper circulation of the water is essential and the inlets and circulation outlets must be so disposed as to help it and maintain an even temperature throughout the entire pool. Authorities differ upon the number and location of the outlets, but good results are generally obtained when there are two inlets at the bottom of one end and two outlets at the sides, near the other end. Individual conditions must again be considered, and care must be taken to prevent the water from short circuiting direct from the inlets to the outlets. If the hot water heater is placed at the proper lower level, the water will circulate by gravity through the heater as in the ordinary hot water system, but owing to the friction caused by passing through the filters and sterilizers, a circulating pump is usually installed. Such a pump also increases the circulation so that less time is required to prepare the water, the other apparatus being designed in the proper proportion. All the piping should be of either brass or wrought iron, and it should be controlled by by-pass valves to facilitate the cutting out of any piece of apparatus temporarily for repairs and whenever the piece is not needed. For instance, it may be desirable to refilter but not to reheat the water; it may be desirable to refilter but not to resterilize it; it may be desirable to fill the pool with water as it comes from the service mains; it

may be desirable to cut out the apparatus and permit the water to circulate by gravity.

For cleaning the surface water, a continuous overflow to the scum gutter is needed, especially when the pool is in use. This requires a constant stream of water entering the pool, and one method for doing this is to have it enter at the top of one end or at the surface of the water so as to create a ripple on it, which will also make any oil or dust on the surface unnoticeable.

At each corner of the pool there should be a strong brass ladder with flat brass perforated or scored treads, fastened to the side walls, never to the end walls. They may be made removable by fitting them into sockets set into the floor of the pool and into the floor of the room above. If they are recessed they have the advantage of not interfering with competitive events. They should not be made vertical but should have a slight pitch to make their use easier. Recessed tile and terra cotta steps and ladders, as already mentioned herein, are vertical and not so well liked by women. In private pools stairs are still used extensively, their treads having a non-slip surface.

The spring board, of rubber-covered ash or hickory, one and one-quarter to two and one-quarter inches thick, is generally ten and one-half to thirteen feet long. The official board is from twelve to thirteen feet long, twenty inches wide, and projects not less than two feet beyond the edge of the pool. The height above the water is from two and one-half to four feet, and the fulcrum is placed at least one-third of the length of the board from the end. All metal bolts, clamps and fittings should be of brass or bronze, and the board should be adjustable and removable. Occasionally an overhead swimming instruction cable or track must be provided for supporting pupils suspended in belts, and sometimes a trapeze and rings are suspended from the ceiling. They are often dangerous when used under such circumstances.

In a private swimming pool the writer had occasion to provide electric lamps in waterproof or marine globes recessed into the side of the pool below the surface of the water. This pool was lined with twelve-inch square pieces of glazed terra cotta and the recesses were made twelve inches high and twenty-four inches long, with curved backs to reflect the light upward, outward, and downward into the water, resulting in a pleasant subdued light when the other lights in the room were not in use. The globes were elongated and the electric outlets were placed in the ends of the recesses. The tops and bottoms of the recesses were grooved, those at the top being deeper than those at the bottom. A piece of removable, clear, wired glass, provided with finger holes, was then lifted into the top groove and dropped into the bottom one so as to be held in place by them both and thus protect the globes.

It would be well for anyone that is planning a swimming pool to obtain a copy of the Inter-collegiate Swimming Rules so that those requirements can be fulfilled whenever possible. The holding of diving and swimming contests, and the playing of games add to the enjoyment of the pool, increase its patronage, and make it a success, while a small variation from the requirements of the rules may defeat its purpose.

Ramps in Buildings—Ramps are useful for overcoming slight differences in level within buildings where new buildings are joined to existing work and the conditions do not permit the floor levels to be made to agree. Also, where slight differences occur in levels and where one, two, and even three isolated steps encountered unexpectedly would be dangerous, they can be eliminated entirely by the use of ramps. The conditions in each particular case must indicate the most practical to be used. Of course, the nearer level the ramp is, the better.

It has been found that ramps with a slope having a rise of one foot in eight feet in length, are not excessive for comfort in walking if they are not too long. In some cities the building laws regulate the slopes of ramps in

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certain types of buildings, as for instance, in New York, to overcome any difference in level between corridors, passages, lobbies, and aisles in a theatre, gradients of not over one foot rise in twelve feet may be used if no vertical rise occurs. And in buildings of a public character, a slope of one foot rise in ten feet is permissible. Some building codes permit one foot rise only when the length of the ramp is ten feet or less. In several high schools in California, the stairs are omitted and ramps are substituted. They have a slope of one foot in six feet and are six feet wide. They have proven entirely satisfactory. The objection to steep ramps is not only that walking up them is tiresome, but also that there is the likelihood of slipping.

Steep ramps should be provided with some non-slip surface. There are a number of such materials on the market, some in the form of metal strips having grooves filled with lead, carborundum, or other abrasive material, and some in the form of floor tile made of aggregates into which a tough abrasive substance is incorporated to produce a durable surface. Some such aggregates may also be applied in one operation, as a cement floor would be laid. The tiles are manufactured in many sizes, shapes, and colors so that innumerable designs may be obtained. The more smooth the non-slip surface is, the better, since it is more easily kept clean. This is especially true in public buildings, the writer having noticed that it was impossible to remove the chewing gum from the surface of the tile that was used for the ramps in one of our large railway stations. In a theatre, where for appearance and quietness a carpeted surface is sometimes needed, the carpet should be selected with a surface to suit the slope of the ramp involved, so that the people will not slip on it.

Ramps are also used to advantage in garages. They are cheaper to install than elevators and require no expense for maintenance. As the number of elevators that are needed to serve the traffic in the building increases, the more satisfactory and cheaper the ramps become in comparison. The ramps require little more space than two elevators, and their advantages more than offset the value of the additional space. They eliminate the delay in elevator service due to the absence of the operator, and dispense with his services. Their use is uninterrupted whereas the elevator may be used for only one automobile at one time, or it may be out of use pending repairs. The kind and amount of service to be had from the ramps depends upon the type of the garage in which it occurs; the traffic differs in many. One-way ramps are preferable to two-way ramps, and sometimes two are needed. One one-way ramp may be all that is needed in a truck garage where they all leave or return to the garage within a short period of time at the beginning and at the end of the day respectively.

The amount of space taken up by the ramp depends upon its shape and slope, the type of traffic involved, the shape and area of the garage plan, and its location in the plan. Generally, the straighter the ramp, the less the amount of space needed for it. The curve in a circular ramp and at the angle in a right angular one must not be such that the large cars will scrape their fenders. As a safeguard, the ramps should be provided with curbs wide enough to prevent the fenders from reaching the walls. They should be made about ten inches high and the distance between them should be about eight or nine feet, or more if the size of the automobiles or two-way traffic require it. The circular ramps should have a diameter of about sixty feet for the average car, except that trucks may require as much as eighty feet. The large trucks can, however, be kept on the ground floor.

While an easy grade for the ramp is desirable, a steeper one requires less space and will be satisfactory if made with one foot rise in five or six feet. A rise of one foot in five feet is about the limit for some cars running on second gear when in fair condition. In some garages a patented system of staggered floor levels is used, making the ramps shorter with easier grades and without side walls to obstruct the driver's view. The surface of these ramps can be made of vitrified paving brick, Portland cement mortar with grit and a chemical hardener added, or any other durable material.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Architects' Specification Hand Book—New and revised edition of the Truscon Specification Book containing complete specifications on water-proofings, damp-proofings and technical coatings for all uses. 104 pp. 8½ x 11 in. Truscon Laboratories, 1628 Caniff St., Detroit, Mich.

Casements and Double Hung Windows—Handsomely illustrated Brochure showing all types of casement windows and special casement hardware. Sectional drawings, details of construction and specifications. 48 pp. 8½ x 11 in. David Lupton's Sons Co., Allegheny Ave. & Tulip St., Philadelphia, Pa.

Lupton's Service and Products—Catalog No. 11. Complete and profusely illustrated handbook and catalog describing steel windows for commercial, institutional and residential buildings, including new types of windows for apartments, pivoted and continuous sash, special window hardware, etc. 192 pp. 8½ x 11 in. David Lupton's Sons Co., Allegheny Ave. & Tulip St., Philadelphia, Pa.

Orienting the House—Booklet with chart treating in an interesting way the question of placing the house with relation to the sun's rays. A clever little Brochure. 5 x 6 in. 16 pp. American Face Brick Association, 1160 Westminster Building, Chicago, Ill.

Poles Worthy of the Stars and Stripes—1922 Catalog covering the subject of flag poles for various uses. Diagrams showing best method of applying to buildings, etc. 32 pp. 4 x 9 in. The Pole & Tube Works, Inc., Ave. D & Murray St., Newark, N. J.

Architectural Bulletin—Describes gas ranges, water heaters and many specialties which will be found useful in hotels, residences, club houses, restaurants, etc. 48 pp. 5 x 8 in. Wm. M. Crane Co., 16 to 20 West 32nd St., New York.

Riviera Mission Roofing Tile and Riviera Shingle Roofing Tile—Data sheets showing detailed drawings and application of these two types of roofing materials to residence work. Excellent reference material for architects and draftsmen. 3 pp. 8½ x 11 in. B. Mifflin Hood Brick Co., Atlanta, Ga.

Drawing Instruments—Catalog and price list C-60 of American made drawing instruments. Describes full line of instruments of the highest quality. C. F. Pease Co., 860 North Franklin St., Chicago, Ill.

Atlantic Terra Cotta—Monthly Brochure, each issue treating, both in text and illustration, of some notable piece of Italian architecture. The Osperdale Maggiore, Milan, is treated in the June number. 8 full page plates, size 8½ x 11 in. Atlantic Terra Cotta Co., 350 Madison Ave., New York.

BETTER ADVERTISING TO ARCHITECTS.

AS A result of the Joint Conference on Better Advertising to Architects between the Board of Directors of the American Institute of Architects and the Building Materials Producers of the United States at Indianapolis and of the Conference held in Chicago, June 5 and 6; a resolution was drawn and passed at the recent Convention of the A. I. A. at Chicago looking to a better understanding among architects and the producers of building materials as to their common interest in the characteristics, presentation and appropriate utilization of products entering into construction.

The resolution is as follows:

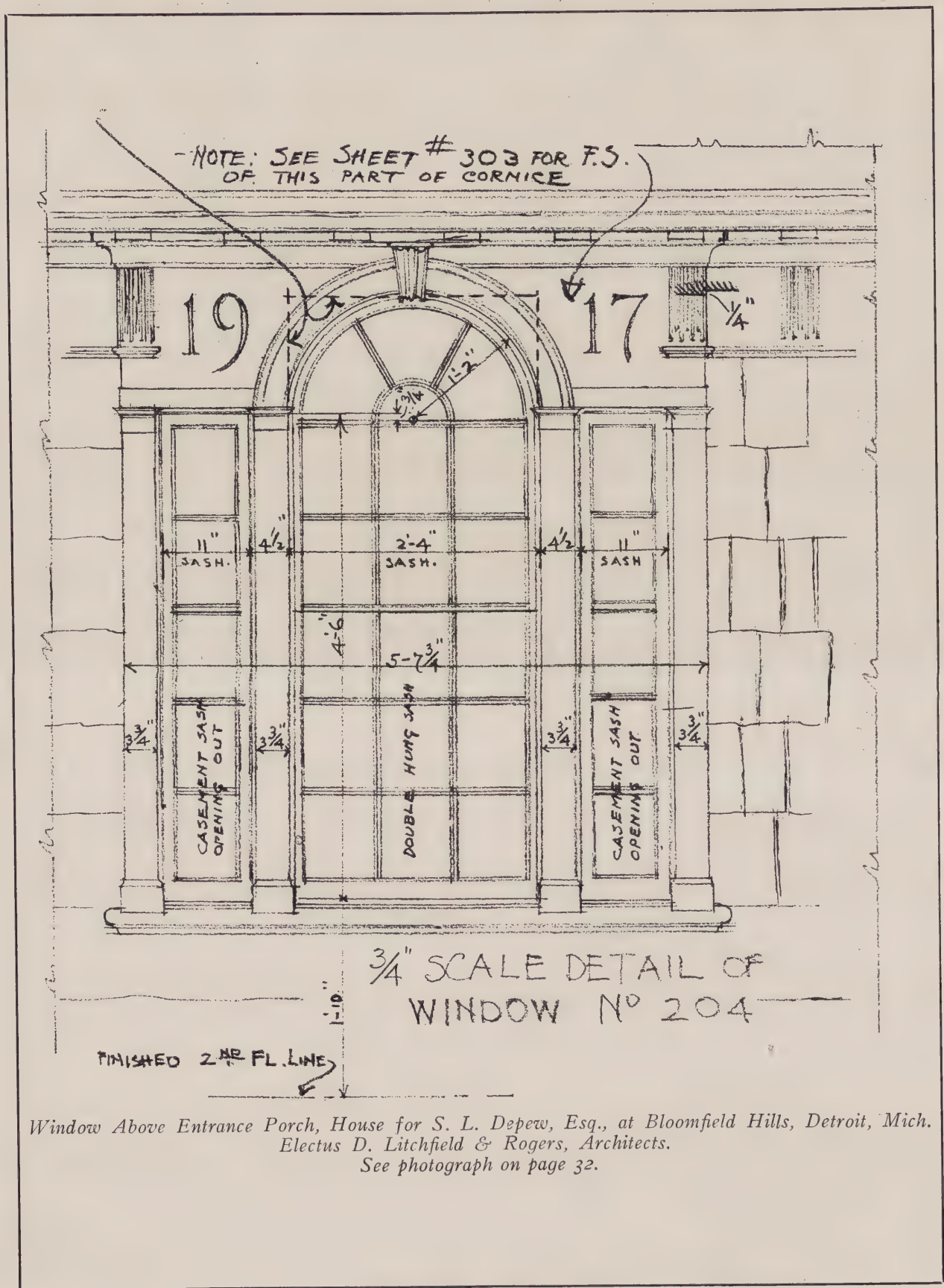
"Resolved by the American Institute of Architects, in 55th Annual Convention assembled, that the Structural Service Committee be authorized to create a Producers Section of the Structural Service Committee as a sustaining body to collaborate in the following duties:

"(a) To advise and counsel with manufacturers, who may so desire, on the character of their advertising as to size, form and content.

"(b) To assist in furthering the use, by Architects and Producers, of the Standard Construction Classification adopted by the American Institute of Architects.

"(c) To promote sincerity and reliability of statement in advertising."

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ARCHITECTURE AND THE COMMUNITY

THE attitude of the public towards architecture is coming in for special consideration at present owing to a realization on the part of a considerable portion of the profession that the public in general knows very little about architecture, perhaps less about the services the architect renders, and that this state of affairs is detrimental to the proper development of architecture in this country and to the success of the profession.

So long as the public does not know, in a measure at least, the difference between good and bad architecture and does not know what the architect contributes to a building, it is going to be discouraging work for the architect, excepting where he can secure the attention of some few people who have had advantages that make them appreciative.

A drive through almost any of our prosperous towns is enough to reveal the chaotic state of the public mind in regard to architecture. We find in many of the old towns a few delightful houses dating from Colonial days interspersed among horrors of unknown origin produced, evidently, without the benefit of any architect's services, and here and there a house that, in addition to being up-to-date in every practical way and suited to our present-day manner of living, has much of the dignity and charm of Early American domestic architecture.

Most of the houses have the look of having been turned out as cheaply as possible, with the exaggeration of a feature here and there to give a semblance of character, though it be bad. This is a pity when we have traditions both East and West that together with a sane and tasteful meeting of modern living requirements are capable of producing pleasing homes. The business buildings, the school houses, churches and other public and semi-public buildings, are as a rule not up to as high a standard of design as they should be.

Deploring conditions does little good unless one goes further and does something to remedy them—so let us consider what can be done. In the first place the architects and architectural draftsmen of a community can do much through their local organizations such as the local Chapter of the A. I. A., and the Architectural Club, and these organizations should work together. In doing this it will be advantageous to get in touch and keep in touch with the Public Information Committee of the American Institute of Architects. Mr. J. V. Van Pelt is chair-

man of this committee and his address is 126 East 59th Street, New York City. What is needed is enthusiastic work in each community by men who are intimately acquainted with local conditions and really interested in their own town or city.

There are innumerable ways in which a beneficial influence can be brought to bear upon the public of any community. For instance, exhibitions of drawings, photographs and models of good architecture can be held and the public invited, including the school children in the upper grades. Often this can be arranged in co-operation with the local public library. Furthermore, a set of good photographs of whatever buildings of a worthy architectural character the town or city may possess might well be hung as a permanent exhibition in the public library. The public school authorities can do much by directing the attention of pupils to good examples of home building, old and new. The city council and the local business men's organization may well exert a powerful influence in favor of good design for all public and semi-public buildings. But all these agencies need the guidance of men trained in architecture—this is where the local organizations of architects and draftsmen can render a service.

PENCIL POINTS stands ready to co-operate with its readers in this work and you are invited to write to the editor for suggestions touching the problem in your community; also to send in reports of plans and of work accomplished for publication, in order that readers in other places may get ideas from what you are doing.

The architectural club that provides a pleasant social program and educational facilities for its members has realized only part of its possibilities if it does not also render a service to the community. Each and every town and city in this country should grow more beautiful year by year, more consistent in character, with fewer unsightly buildings. In order that this may come about, leadership is needed and this leadership must necessarily come from the men who have the training and the necessary knowledge of architecture—the architects and draftsmen of the community, working together in their local organizations. The work may be started in a small way, but it should be started at the end of the summer season—now is the time to think about it and formulate our ideas, so that when vacation time is past we may say to our colleagues—Let's go!

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*Charcoal Drawing by Schell Lewis of Detail by Charles A. Platt, Architect.
Size of Drawing, 2 ft. 4 in. x 1 ft. 7 in. Three-quarter Inch Scale.*

RENDERING IN CHARCOAL

BY SCHELL LEWIS

A WORD of explanation should, I believe, be offered regarding the purpose of these drawings. They are made as a means of studying the design in the office and are not regarded as fine examples of rendering. Their chief virtue lies in the fact that they can be made with considerable speed, most of the examples that have been published in PENCIL POINTS from time to time being about a day's work.*

There is little need to more than touch upon the value of conventional shaded drawings in the architect's office. The fact that draftsmen are trained in the use of such drawings from their student days enables them to realize at a glance the projections indicated by the shadows. Since the depth of the shadow is equal to the projection causing it, it would be possible for the draftsman to reconstruct the plan or section with no other data than the shaded drawing.

These drawings as usually executed involve considerable time and labor, a pencil or ink drawing being first carefully made on the best paper, and then laboriously rendered with numerous washes, a far too expensive method for common use in studying details.

I do not want anyone to think that I am offering a royal road to fine effects with a few simple tricks; for making a drawing in charcoal is not simple and one has to buckle down and work with a will. These drawings can, however, be made with considerable speed once the method is acquired.

Briefly, the rendering is made

*Charcoal Drawings by Mr. Lewis appeared in the issues of this journal for May, June, October and December, 1921.

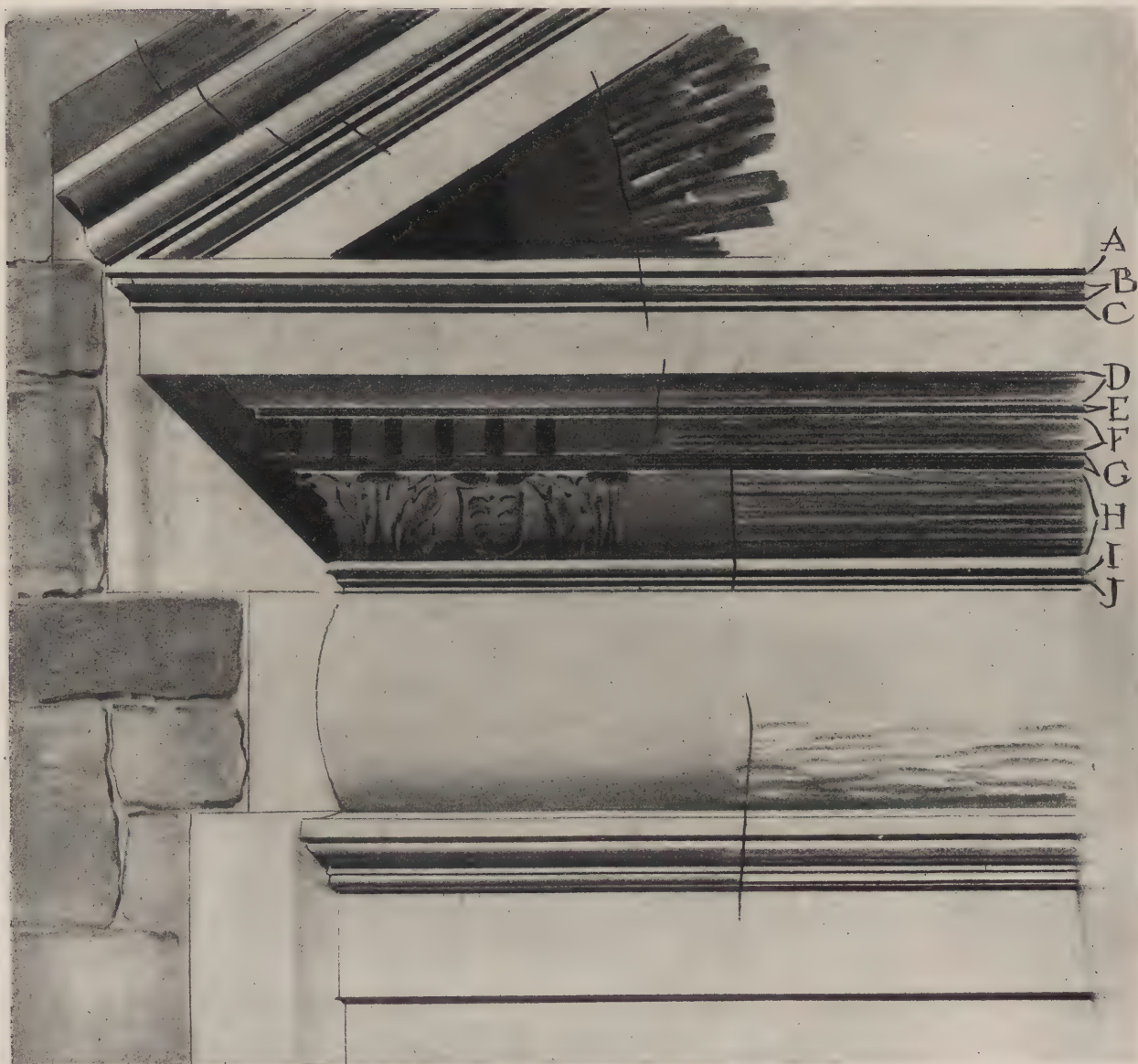
over any drawing, be it a study or working drawing that is complete, on a transparent paper that has a surface soft enough to take the charcoal. The kind of paper is decidedly important. It must be transparent enough so that one can see the lines of the drawing beneath and with a surface that will take a full black charcoal line and allow the charcoal to be rubbed to the various tones needed. The thin, soft, yellowish paper which is sometimes used for making office tracings of large detail sheets is what I have in mind, although much of the paper now used has a hard surface which is entirely unsuitable for this purpose. The thin white papers commonly used are of little value. The charcoal I have used is the French stuff in a green box with "Tusains Rouget" on the cover. There are probably other kinds that would answer as well. Many of the sticks are useless, giving a hard, gray line. A piece that will give a rich, black line and yet is not so soft that it will crumble at the touch will be treasured and

used to the last bit. The charcoal is laid on to about the value required, using the T-square or working free-hand as the occasion may demand, and is rubbed to the finished tone with a paper "stub," or the fingers in a full size drawing. A "Wolff" pencil, grade BB, is very handy. The outlines of the shadows can be penciled in with it (a graphite pencil must not be used at all on the drawing), and it can be used to good advantage on fine ornament, lettering, etc. The stick charcoal will make a very fine line when sharpened to a chisel point, and will stand up well, but will crumble very easily if used with a pencil point. A fine sandpaper pad will have to be



Charcoal Drawing by Schell Lewis. Quarter-size Detail of Entrance Shown on the Opposite Page.

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Detail Drawing Showing Method of Rendering in Charcoal.

used continually to keep the necessary point on the charcoal.

The drawing shown at reduced size on page 10, was made from a three-quarter-inch scale detail, in regular office practice, but with this article in view, as it shows a number of conditions arising in rendering. In the smaller detail on this page, I will try to show how the charcoal is handled for various mouldings.

The first step is to stretch the paper tightly, using plenty of thumb tacks over the drawing which is trued to the T-square. The light tones, indicating variations in stone work, weather stains, etc., can be put in over the entire drawing and if rubbed in well will not smudge. The drawing should then be protected with a paper cover which can be moved down as needed. As the charcoal will smudge at the slightest touch, each line and moulding must be finished

completely as the work proceeds. This may sound serious, but it must be remembered that these drawings are mere statements of fact, not pictures in which the composition must be studied and altered. The draftsman should be thoroughly familiar with shades and shadows, however.

The horizontal lines are worked on the edge of the T-square which can rest on the paper, although sometimes it is desirable to keep it away from the surface with a few thumb tacks on the under side. The vertical members must be put in from time to time, often the horizontal work below is in, with the aid of a large wooden triangle which is kept clear of all rendering by thumb tacks at the bottom and at the top, or else used cantilever fashion, if the triangle will not span the work.

On the drawing shown here, after the light tones were worked in, the cartouche was drawn, sketching

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the shadows in, working them with the stub, adding charcoal as needed until the desired values were reached. The left-hand pediment moulds come next, using a wooden triangle with a thumb tack under each point to keep it clear of the cartouche, and then the right-hand portion of the pediment was done in the same manner.

The detail drawing will explain the entablature moulds, I think, each member being ruled in with the T-square and completely finished with the stub, before the next was started. Thus, the members at A, B, C, D, etc., were each worked in this manner, the portion at the right showing the charcoal before being rubbed with the stub, used sometimes against the T-square, sometimes free-hand. The dark part of the shadow under the pediment, the spaces between the dentils, and part of the shadow against the wall were added after the fixatif was blown on, as I will explain later. Note the head on the architrave mould. This was put on as a single black line, well worked with the stub, a light line with the charcoal stick was added, and then the shadow under the head. The point is to finish each line completely as you proceed.

Returning now to the large drawing, the dark spaces between the dentils, and the ornament, were put in with a BB Wolff. For the caps, ornament and corbel, the charcoal and stub were used, helped out with the Wolff pencil, and the horizontal part of the door architrave put in with the T-square. The left-hand column and architrave came next, ruled with the aid of the triangle used as a cantilever, with two tacks at the bottom and one about the centre, which kept the top clear of the ornament. The transom and doors were drawn next, keeping the T-square free of the preceding work with several thumb tacks, properly placed, on the under side. The muntins were rubbed out with a new green eraser worked back and forth against the T-square or triangle. Excepting a few touches on the iron railing this was the only use made of the eraser, as the white lines, if possible, should be left in the work. The right-hand architrave and column were next taken up, of course, and then the column bases, steps, railing, etc., the shadow at the right, vines and shrubbing were last.

You will be bothered by charcoal dust when dark shadows of any size are put in. If the dust is blown off lightly with the lips eighteen to twenty-four inches from the paper less smudge will result than if blown when close. The charcoal should be laid on in short strokes running in one direction, as this will give less dust than if used zig-zag fashion. A little smudge is inevitable.

The drawing is now ready for fixing which must be done carefully so as not to smudge the sensitive charcoal.

I have intimated that there can be no going back to alter values, but this is not strictly true. After the drawing is thoroughly fixed and dried, additional charcoal can be added to such parts as have already been drawn on, giving a very rich black. Parts of the paper previously untouched cannot be drawn on now, however, the glaze of the fixatif on the clean

paper preventing. Dark accents and shadows are best brought out in this manner, rather than by attempting to get a very black tone the first time.

You will probably want to try some changes after the drawing is finished. This can be done by rendering the changed part on a separate piece of paper, trimming it to some convenient line and pasting it on top of the drawing. You will need a piece of white paper between the two to keep the first from showing through. Several of the drawings published in PENCIL POINTS have had parts changed this way.

The drawing shown here has been mounted, or floated, on white cardboard. Before trying this make sure that the thin paper will stand such treatment. I know, from sad experience, that some paper will not. It is safest to allow the fixatif to dry a day before mounting. Mounting thin paper, by the way, is best done by laying the drawing upside down on a piece of glass, or similar surface, applying the paste with a brush and laying the cardboard on top of the drawing.

ROME FELLOWSHIPS AWARDED

AS THE result of this year's competition The American Academy in Rome has awarded the Fellowship in Architecture to Henri Gabriel Marceau. A portrait and short biography of Mr. Marceau will be found on page 37 of this issue.

The Fellowship in Sculpture was awarded to Lawrence Tenney Stevens of Brighton, Mass. Mr. Stevens is at the Boston Museum School of Fine Arts, and last year received honorable mention in the *Prix de Rome* competition as well as a Fellowship for that summer at the Tiffany Foundation at Oyster Bay. Wheeler Williams, Chicago, a graduate of Harvard, received honorable mention.

A Fellowship in Painting has been awarded to Alfred Floegel, New York City. The stipend will be provided by the Metropolitan Museum of Art as Trustee of a fund established in memory of the late Jacob H. Lazarus of New York. Mr. Floegel is the ninth Fellow of the Academy to be appointed on the Lazarus Foundation, such appointment being made every three years.

GOOD HOUSES

WITH the thought in mind that a house to be good must be useful, substantial and beautiful, Russell F. Whitehead has produced in "Good Houses" a book that will exert a beneficial influence. This book has just been published by the Weyerhaeuser Forest Products, Merchants' National Bank Building, St. Paul, Minn., who send it free on application. It interprets the typical historic architectural styles which are adaptable to wood construction and which provide the logical basis for present-day American domestic architecture. The many houses shown in full-page illustrations and in plans are modern houses inspired by various types of Early American Architecture and they are well designed. The illustrations of these designs are by Birch Burdette Long. The text is interesting and contains a large amount of information well presented.

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*Pin-hole Photograph of Model of The Bushnell Memorial Hall,
Hartford, Conn. Helmle & Corbett, Architects.*



*Photograph at Nine Inches (Glass Lens), Model of
The Bushnell Memorial Hall, Hartford, Conn.
Helmle & Corbett, Architects.*

ARCHITECTURAL MODELS OF CARDBOARD, PART IV

BY HARVEY W. CORBETT

This is the last installment of an article in which Mr. Harvey W. Corbett of the firm of Helmle & Corbett, Architects, New York, tells exactly how he makes cardboard models of buildings; how he uses them for study in the process of designing and as a means of presentation. Mr. Corbett goes into the most minute details of the making of these models and illustrates his description with photographs showing the tools used and the various operations. There are also numerous interesting photographs of models and of details of models. The making of landscape features, trees, hedges, lawns and other parts of the entourage are described, also such incidentals as automobiles and figures.—Ed.

WHILE well-made cardboard models properly used are of great value to the architect in studying and in presenting the design for a building, there are a number of ways in which they may mislead the architect or fail to convey a correct impression to the client. One finds out some of these things about architectural models as one uses them—I did. For instance, three views of one model are presented here, each of which gives quite a different impression of the building from the others. On this page is a photograph that shows the model as it is casually viewed, standing on a table at some distance from one and considerably below the eye level. Excepting for the slight distortion due to the photography this gives one an idea how the building would look when seen from a low-flying airplane or possibly from a tall building some blocks away, a point of view that we need not concern ourselves about very greatly.

What we do want to know and to show the client is, what the building will look like when seen as most people will see it, from the street and at no great distance. In order to see it in this way I must, of course, place my eye at the point at which the observer will stand, measuring the distances in the scale of the model. Therefore, I take the model in my hands and hold it so that my eye is only a little above the base of the model and only a few inches from the corner of the building. At that range one does not see very satisfactorily and a client is likely to see even more badly or hardly at all, understandingly.

Photography seems to afford a way out so the photographer places his camera as close to the model as his lens will work and produces such a picture as the one shown on the lower part of page 14.

This is not satisfactory, for the observer is placed

too high and at too great a distance. The distance from the nearest corner of the building to the centre of the lens in this case was nine inches, and since the scale of the model is one-thirty-second of an

inch to the foot, that means a distance of two hundred eighty-eight feet—more than twice the distance the building will usually be seen from. The camera lens fails us, and as in the cases described in the installment of this article in the April issue we resort to pin-hole photography, with the result seen in the photograph reproduced on the upper part of page 14—a photograph taken from a point of view from which the building will be

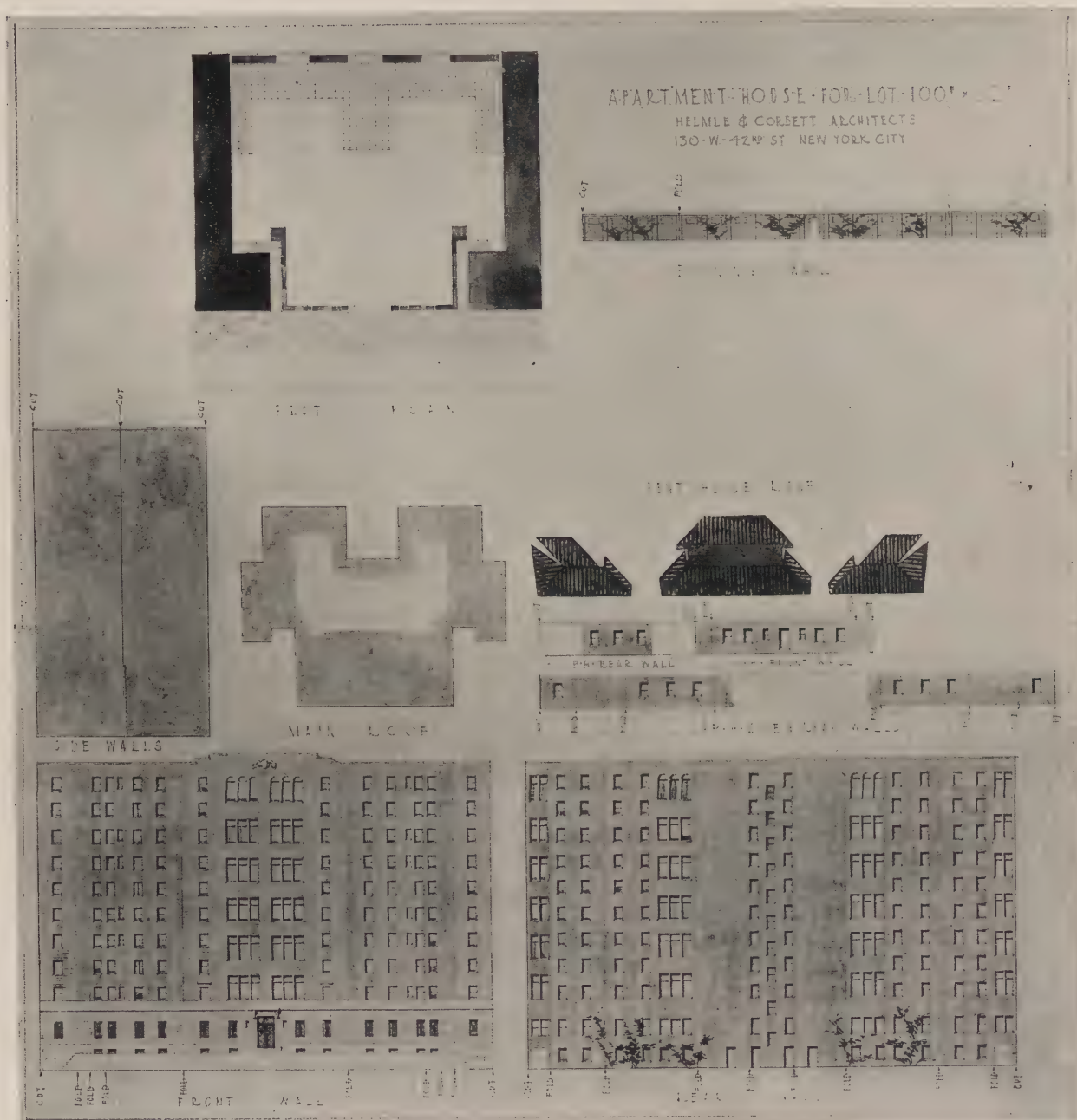


Photograph Showing a Model as Usually Viewed. Model of Horace Bushnell Memorial Hall, Hartford, Conn. Helmle & Corbett, Architects.

seen very often. The pin-hole lens in this case was only four inches from the nearest corner of the building, equivalent, in the scale of the model, to one hundred twenty-eight feet, which is a fair approximation of the distance one would be away from the building if viewing it from the street corner diagonally opposite. Now if we examine the three photographs with the purpose of studying the design by means of them, we will find from the pin-hole picture that the tower and portico will count much more effectively than one would have been led to believe from an examination of the photograph on this page. Furthermore, the pin-hole picture gives an impression of the mass of the building rising before one and above one while the other photographs lack this impressiveness and realism and make the building look rather like a toy.

It may be well to say in passing that the pin-hole photograph presented here shows the addition of a background. This was done by cutting out a pin-hole photograph of the building and pasting it down upon a card on which the sky and distant trees were later rendered. The picture of the building was also retouched slightly. This picture was then photo-

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Sheet Showing Lay-out of Model for an Apartment House.

graphed and the result is seen here—a picture that conveys a correct idea of how the building will look from the street. Many other cases might be cited, but I believe enough has been said in this issue and in the April issue to indicate the ways in which architectural models may be used.

In the June issue I told how I work the cardboard in making these models, and have left the treatment of an earlier stage of the work, namely, the laying out of the various parts on the sheet and the rendering, till this issue in order that I might show a photograph of such a sheet as it came through in the regular course of work in the office. This sheet is

shown on this page. It is practically self-explanatory. I need only to say that the rendering must be rather hard and sharp in order that it may count properly, and considerably simplified.

On page 17 is seen a photograph of this model in an intermediate stage, the card having been cut, the pieces bent to shape and glued together, but the parts have not been assembled and the accessories are still to be added.

A word about accessories and the entourage may prove helpful. I use tiny models of automobiles and street cars frequently. They are drawn to scale, flattened out, on water color paper, and bent and

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glued together. I usually have several small sheets of them ready. In the case of the model of the George Washington Masonic Memorial, views of which were shown in the May issue, there are not only automobiles, but also a complete railroad train, to scale, standing at the station. The plan view of that model shown on page 29 of the May issue shows these accessories and many trees and areas of grass. The trees are made from bits of rubber sponge cut to shape and dyed green, with twists of wire for branches and tree trunks. The grass is made by spreading fish glue evenly over the area and sifting on a mixture of beach sand and green paint in the form of a dry powder, from a can that has a perforated top. The sand and paint are mixed dry.

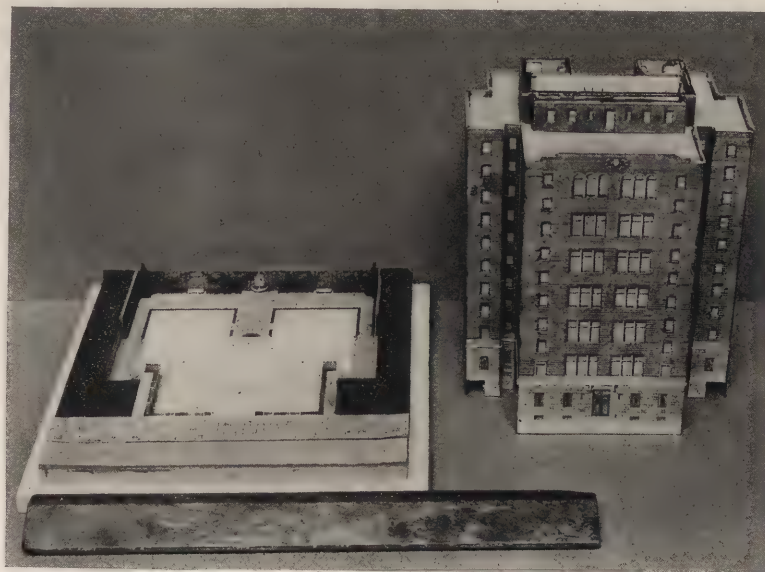
The making of columns, caps and other details that cannot always be represented by rendering but must be constructed, presents difficulties until one arrives at simple ways of working. At one time I thought that I might find small sticks ready turned to use for columns and one day I was delighted to see in the window of a store in a downtown street, slender, round sticks that seemed to be of about the size I needed. I went in and asked about them and was told they were lolly-pop sticks and when I inquired about buying some, I was told that the smallest quantity sold was ten thousand. However, when I explained my purpose I was presented with a number. But I found them useless, they are not of even diameter and are not straight enough, though machine turned they vary surprisingly. At last I hit upon the way of making columns shown in the photograph on page 18. A vise is clamped to a board and a hand drill is clamped in the vise, pointing upward at an angle of about 45 degrees. In place of the drill a slender square stick of white wood is inserted in the chuck.

Holding a piece of sandpaper around the stick with the fingers of my left hand, I revolve the stick by turning the drill and wear away the corners until I have a round column of the diameter I want and with the proper entasis. I have been asked if there is any danger of holding the sandpaper too tightly — there is not, for it gets very hot.

Lying on the table near by will be seen some columns, also some of the tiny discs of cardboard used for Doric capitals or for column bases, also the piece of cardboard from which they were punched

and the punch with which the work was done. I make Ionic capitals by simply bending a rectangular piece of paper over the top of the column and down on two sides, then indicating the volutes, broadly with a lead pencil. The other tools I use in making cardboard models may be seen also in this photograph. The small box-like object in the centre of the table is a small level. By setting the base level and then using this level further to test the work, one may be sure that all the parts of the model will be vertical as one works. At the left of the level is seen a pair of dividers, one leg of which has been ground flat at the sides to form a cutting edge. This is used in cutting discs from cardboard. At the right of the level is a manicure scissors, with curved blades, that is very useful in clipping out small parts. The familiar block of sand-paper is useful not only as a source of supply for the pieces of sand-paper used in turning columns as described, but in many other ways. The rubber bulb with flexible tube and nozzle saves one's lungs in blowing dust out of the corners of the model as one works and in freeing the models from dust after they are made, for when they stand about the office they soon accumulate a coating of dust that cannot be removed so well in any other way. The steel clamp at the right and other clamps of various kinds, are needed to hold parts together while the glue is setting. At the right of the bulb is a piece of the rubber sponge from which the foliage of trees, bushes and hedges are made. This particular piece happens to be of very fine grain, the coarse-grained rubber sponge makes very leafy trees. I may say here that to color the sponge, it is rubbed in dry powder green paint. Pliers with a wire-cutting part in the jaws are needed in making the trunks and branches of trees from wire. I make a skein of soft, black iron wire around two fingers held the desired distance apart, then I twist this skein into a rough cable. I clip off one end with the pliers and unwind the cable about halfway

down in strands composed of groups of three or four wires, each spread apart to form branches. These, in turn, I unwind for part of their length, spreading the wires to form still smaller branches. On the ends of these wires I stick bits of the rubber sponge clipped out with a scissors to form the foliage. When this is done I paint the wire with a mixture of dry powder paint in fish glue. The



*Photograph of a Model Partly Assembled.
See Sheet on Page 16.*

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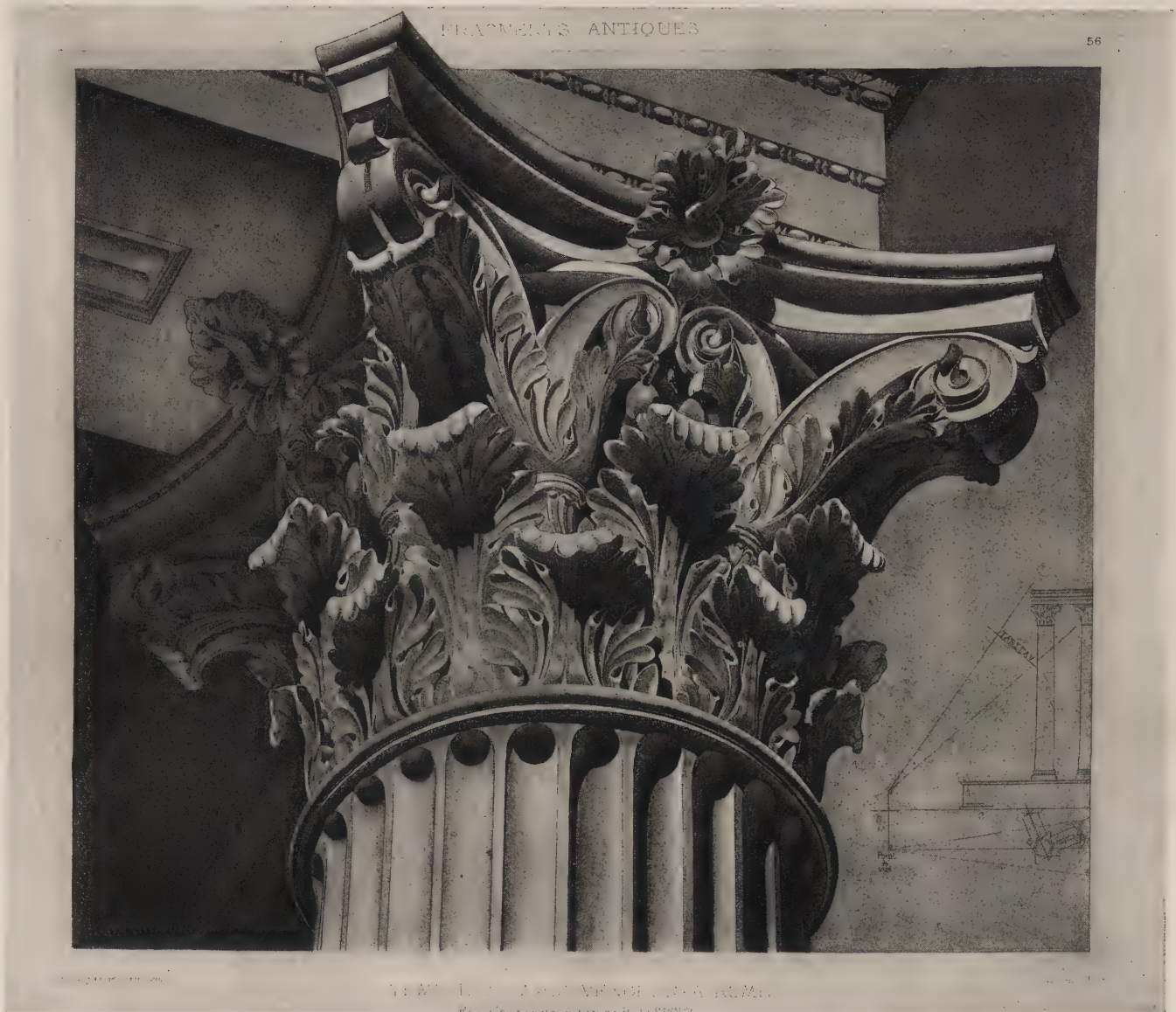
part of the cable that has not been unwound forms the trunk of the tree and the bottom end may be spread to make a foot for gluing the tree to the base, or it can be twisted tight and inserted in a hole in the base, the better way. I must not omit mention of the humble spring clothes pin of wood, it is very useful to hold small pieces of cardboard together while the glue is setting. Tweezers are used in handling some of the smaller parts, glue being put on the part, it is picked up in the tweezers and pressed into place. The plane, seen in the photograph, is so made that the blade comes out to one side for cutting rabbets. With this the simplified profiles of mouldings are worked in soft wood and rounded with sandpaper. The compass saw, the blade of which is hidden by the plane, is used in

cleaning out the "V"-shaped cut in the cardboard in forming corners as described in the June issue. Some chisels used occasionally for cutting out small parts are shown and other tools that are used less often than the ones I have described, and some the use of which needs no explanation.

AN INTERESTING and instructive book is "Visual Illusions," by M. Luckiesh, recently published by D. Van Nostrand Company, New York, \$3.00. It discusses many visual illusions that have a bearing on architectural design, such as the influence of angles, illusions of depth and distance, irradiation and brightness contrast, color, lighting, etc., and has a chapter devoted especially to such illusions in architecture.



This Photograph Shows the Method of Turning Columns and the Collection of Tools Used in Making the Models Illustrated in this Article.



DETAIL OF THE TEMPLE OF MARS THE AVENGER, ROME.
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

The capital shown in the reproduction of a restoration by H. D'Espouy is one of the most interesting details of the Temple of Mars the Avenger which was erected by Augustus in the centre of his forum in Rome, to commemorate the victory at Philippi and the vengeance taken upon the assassins of Caesar.

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PLATE XXX



RENDERING BY ROBERT A. LOCKWOOD

On the other side of this sheet is reproduced a rendering characteristic of one type of Mr. Lockwood's work, a vigorous and highly effective treatment. This is in a manner as well suited to the subject as are Mr. Lockwood's more quiet and often delicate drawings of other subjects.



"ROMANCE" A MURAL PAINTING BY ARTHUR CRISP

The mural painting, a reproduction of which is shown on the other side of this sheet, is one of a pair of panels designed to be set in the oak panelling over the two fireplaces in the lounging room of a country club. This panel typifies "Romance" and the companion panel, "Adventure." The predominating colors are rich, deep blue-greens and browns with touches of gold leaf toned down in antique effect. Size of panel about four feet six inches.



DRAWING BY OTTO F. LANGMANN.
VESEY STREET, LOOKING EAST, NEW YORK CITY.

The drawing by Otto F. Langmann reproduced on the other side of this sheet is admirable not only because of its pictorial quality and as a presentation of an architectural subject, but as an example of the choice of an interesting paper to draw on and the skilful combination of different mediums. The paper is a fibrous Chinese or Japanese paper of a warm tint between ivory and buff. The drawing is mainly in lithographic pencil with touches in colored pencil, a little gouache, and white chalk.

ARCHITECTURAL DETAIL PART XVI

BY JOHN VREDENBURGH VAN PELT

This is the sixteenth instalment of an article in which Mr. John Vredenburg Van Pelt, formerly Professor in Charge of the College of Architecture, Cornell University, Architecte Diplômé par le Gouvernement Français, and author of "Essentials of Composition," will discuss the designing of good architectural detail and point out the means by which the ability to produce good detail can be developed. Reproductions of detail drawings from some of the best architectural offices will accompany this article and the publication of this series of drawings will be continued after this discussion of the subject has been completed—making a valuable feature of this journal indefinitely.

LAST month's article insisted anew on the importance of like characteristics in all parts of a piece of architecture. A very definite controversy is beginning to gather strength on the reasonableness of the latter day worship of the hand-made, more or less crude article. Mr. Richard F. Bach, Associate in Industrial Art at the Metropolitan Museum of Art of New York, reviewed and to some extent ridiculed the fetish worship of the inaccurate, badly finished, hand product in an address before the convention of the National Federation of Arts in Washington during the month of May of this year. He showed with considerable truth how intrinsically beautiful are many machine-made pieces of decoration, fabric and other examples of applied design. Highly effective, because permeated by the satire of a brilliant mind is the arraignment of Thorstein Veblen in his chapter on "Pecuniary Canons of Taste," (pages 151 to 156) in the *Theory of the Leisure Class*.* He accuses us of prizing that which is hand-made because it has become more costly to produce than the more perfect machine-made article. Thus, he says, we exalt our position and prove our wealth and culture. The book is well worth thoughtful reading and the subject unbiased pondering.

Unquestionably he is right. We do not judge the beauty of an object abstractly on its merits, but are governed by a multitude of preconceived notions that have nothing to do with the art expressed in it or by it.

* *Theory of the Leisure Class*, by Thorstein Veblen, B. W. Huebsch, New York, 1919.

It is not always a fact that the un-accidental excellence of a perfect machine-made article is more beautiful than the slips of the craftsman. The variations incidental to the latter may really relieve the monotony of perfection and exact repetition, the

harmonious color scintillations of a rough, uneven, hand-made texture may be far more vibrant than any effect that can be obtained with the most scientifically planned mechanism and the psychological reaction stimulated by evidence of a human touch may give manifold compensation for lapses unbeautiful in themselves. It is not my purpose to take up the cudgels for either side. Suffice it, I think, for us to be honest and as unprejudiced as our natures will permit in judging the art and beauty of a production. But on one point I am fairly well convinced. All parts

of the creation before us must exhibit a similar roughness or smoothness of finish. Finely cut stone and repressed brick will not wed happily with roughly leaded glass, adzed timbers, and a heavy broken-edged slate roof.

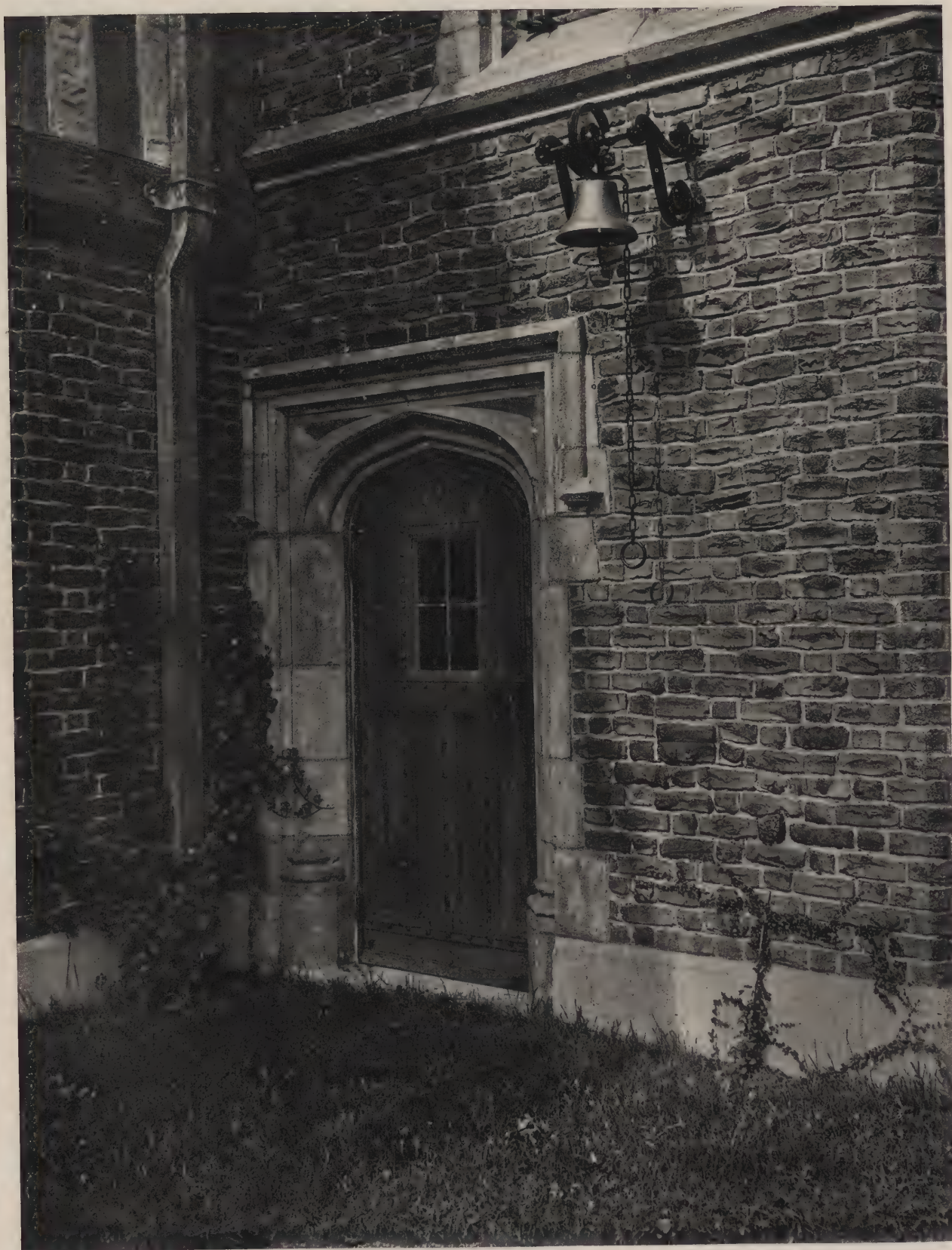
Examples of mistakes might be more striking than illustrations of successes. Unfortunately the former would be useless for reference and our space is limited. So the moral must be pointed by suggestions of what to do instead of what to avoid. Looking about us we can easily find the latter.

The house at Rye, New York, of which Hobart B. Upjohn was the architect, is not in the mistake class. A view of it is shown on this page. The architect has balanced its different parts so nicely, used a somewhat uneven brick, but not a "rough texture," and laid it in common running bond for



Detail of House at Rye, N. Y. Hobart B. Upjohn, Architect.

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Detail of House for Allan Lehman, Esq., at Tarrytown, N. Y. John Russell Pope, Architect.

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the lower walls. There are hewn and pinned timbers for the structure of the second story, but not split rails characteristic of the careless back-woodman's log cabin. The roof is graduated with reasonably square-end slates, not so thick as to imply that they were the scrap left over from a yeoman's stony field after the best had been sorted out. Notice the leading of the windows and how that of each story fits with its environment. It is especially that environment in the second story that makes the photograph a particularly valuable document. The brick filling of "nogging" of the timbered walls, evidence of the loving care of the designer, is a mine of ideas. Two vertical framing panels of the main gable have a projected pattern and are symmetrical, the small panel under the window of this gable reveals a center that marks the axis. The running panels are in a succession of different bonds that harmonize one with the other and give endless variety and interest to what might have been commonplace. The face of all the brick is set one-half inch back from that of the timbers so that it may not assert itself obtrusively. There is only one change that I should like. The panels on each side of the windows of the right-hand gable are sufficiently symmetrical to make the slant of the lines of the left-hand panel too much at variance with the horizontality of those of its correspondent. While it does not seem to me that the panels would need be exactly alike, I should prefer the same general direction in their dominant lines.

The brick of this house is selected common, about as rough as a Harvard, laid with a flush half-inch joint in white mortar and the timbers are five inches from front to back.

The corner of the Allan Lehman House, John Russell Pope, architect, shown on page 28, affords one more example of harmonious blending of material, each with an equal degree of roughness of texture.

First examine the stone and note the small inaccuracies. They do not appear studied, but the natural result of casual workmanship. The edges of the bond stones slant away from the exact vertical and are all the more attractive for that. The finish of the timbers and stucco of this house have been commented upon in an earlier article, but the illustration now shown gives a new view of the brick work. The wall is laid up with swelled red brick in Flemish bond. They vary in color from almost black to light salmon, the refuse of the cull pile. The joint is normally five-eighths of an inch wide of white mor-

tar pressed back with a jointer, but the irregular outline of the brick, some small, some large, has run a large proportion of the bed joints out of line and varied their thickness from a quarter to three-quarters of an inch. Do not abandon the study of this illustration without examining the door panelling, large headed nails and lock. The bell is in excellent keeping with the whole and its appearance implies that it is used.

A rather marked contrast of brick work that must depend in some degree upon its color for its success or failure is the combination of garden terrace, wall and brick house in the illustration on page 31. This is the residence of James A. Blair, Esq., at Oyster Bay, L. I., Carrère & Hastings, architects. The wall and steps in the foreground are red, standard, rain-washed brick, rough cut but not what is called "rough texture." The joints are light grey, three-quarters of an inch wide, struck flush and with a rough finish probably obtained by using grit in the mixture and scraping them off with the edge of the trowel. The bond, as can be seen, is Flemish. The risers are all headers, laid flat, with stone treads, and harmonize delightfully with the garden walls and their flagstone copings. On the other hand, the house

is built of rough-texture tapestry brick, Roman size, 18x1½x6 inches, laid up in a special pattern. The spandrels of the arch are of special brick also laid in pattern as is the brick balustrade above the arch. Although there is a similar degree of roughness of finish in house and wall, there is a dissimilarity in the quality of the two architectural expressions. Perhaps this is sufficiently motivated by the fact that one pertains to the main element, the house itself, the other to the garden, which should in all reason be simpler. However, it would have been possible to express this differentiation and to lavish an equal amount of care on the house by studiously designed pattern work in the

same brick as that of the garden. As it stands, the simpler steps and terrace walls with their clinging vines have to my mind a greater charm than the more studied and certainly more expensive house wall.

A beautiful example of contrasting material handed down to us by the past is that shown on page 32. This doorway of the Church of Saints Peter and Paul, San Stefano, Bologna, Italy, is made up of brick, limestone, marble and terra cotta, all so wonderfully intermingled and blended that no mutest discordant note is discernable. The graceful,



Polychrome Terra Cotta Showing a Variety of Textures.

PENCIL POINTS



*Detail of Lion House, Lincoln Park, Chicago, Ill.
Perkins, Fellows & Hamilton, Architects.*

PENCIL POINTS

flowing Romanesque ornament of the archivolt, the sculptured pier caps, the marble inserts, and pattern brick, are in perfect keeping with the simple background brick of the walls themselves. Ravaging time has wrought some disintegration at the base of the latter, but the original jointing still shows in their main body higher up and we find them to-day, despite the lapse of years and crumbling mortar, regular, but not too even, in perfect keeping with the patterns, marble, sculpture and modelled designs.

A modern effort to express a multiform composition in brick and kindred materials is to be seen in the entrance to the Lion House, Lincoln Park, Chicago, page 30, where the architects, Perkins, Fellows & Hamilton, have carried their forms from the realm of the geometrical into the pictorial. The frieze of the gable with its inserts and pattern recalls the horizontal band of the Church of Saints Peter and Paul, but the broad quarry tile background about the arch, with the brick key stone decoration and the lionesses at the springing line are entirely modern. Indeed, I think this a very able piece of work executed with great perception and judgment. Notice the differences in value obtained by the relative projection of different parts of the design. The plane of the pictorial representations is slightly higher and the joints of the moulded brick that form them, although white, are almost flush. These fine brick

divisions outline the muscles and planes of the animals and were evidently worked out like the leading of an old cathedral window with scientific care. The quarry tile have a broader white joint or grouting kept back from the face so that each tile is enriched by the frame supplied in perspective by its projection. The spotting on the terra cotta has been made unusually large and carries to the point from which the lions and other elements of this broad design must be viewed. Finally, in order to differentiate the pictorial motive with its ground from the main framework of the composition, the body of the brick wall, arch rings, side piers and cornices have been laid up with brown mortar instead of white. The main typical joint is half an inch wide and raked to give it shadow. Otherwise, with a joint so nearly the same in color as the brick, the wall would look flat. Of course the initial feature that gives special interest to this composition is the deeply-recessed opening with its broad shadow. That is not part of our immediate research in the realm of detail and texture, so I shall only enlarge upon it to the extent of drawing attention to the tile vaulting, excellently in keeping with the burnt clay of the exterior.

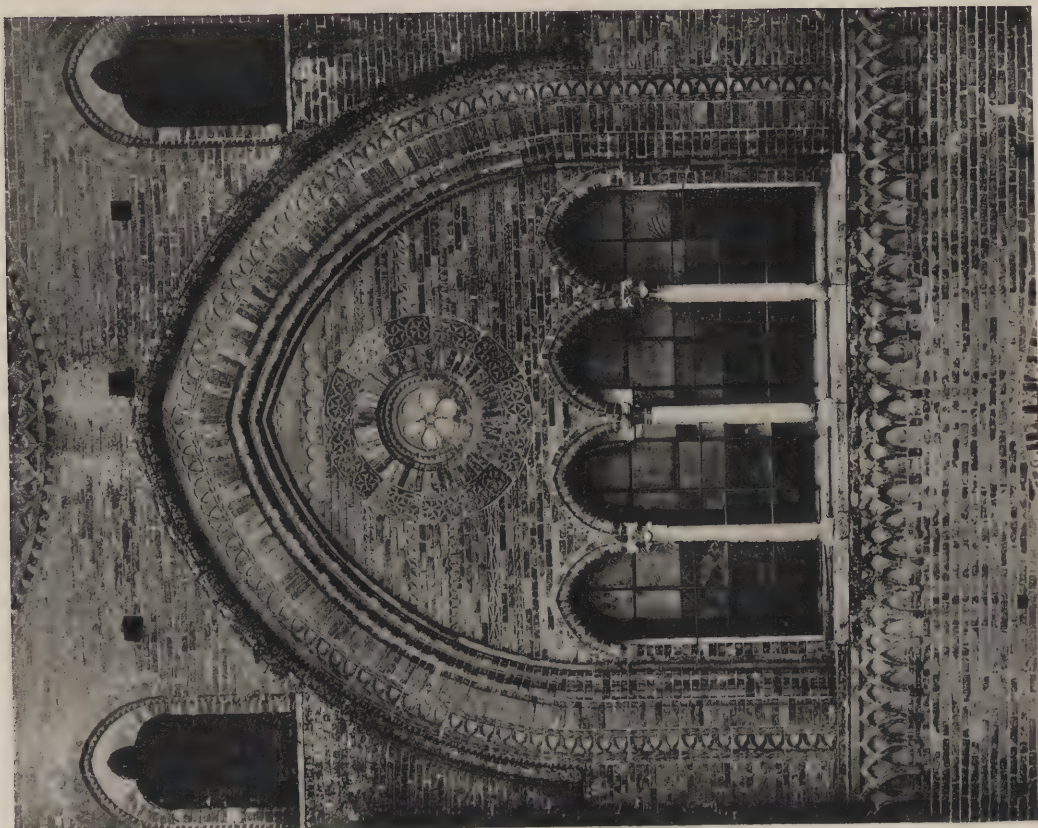
One more example, from the past again, should set us forward on the road of our own endeavor. It is useless to examine and study the work done by

(Continued on page 36)

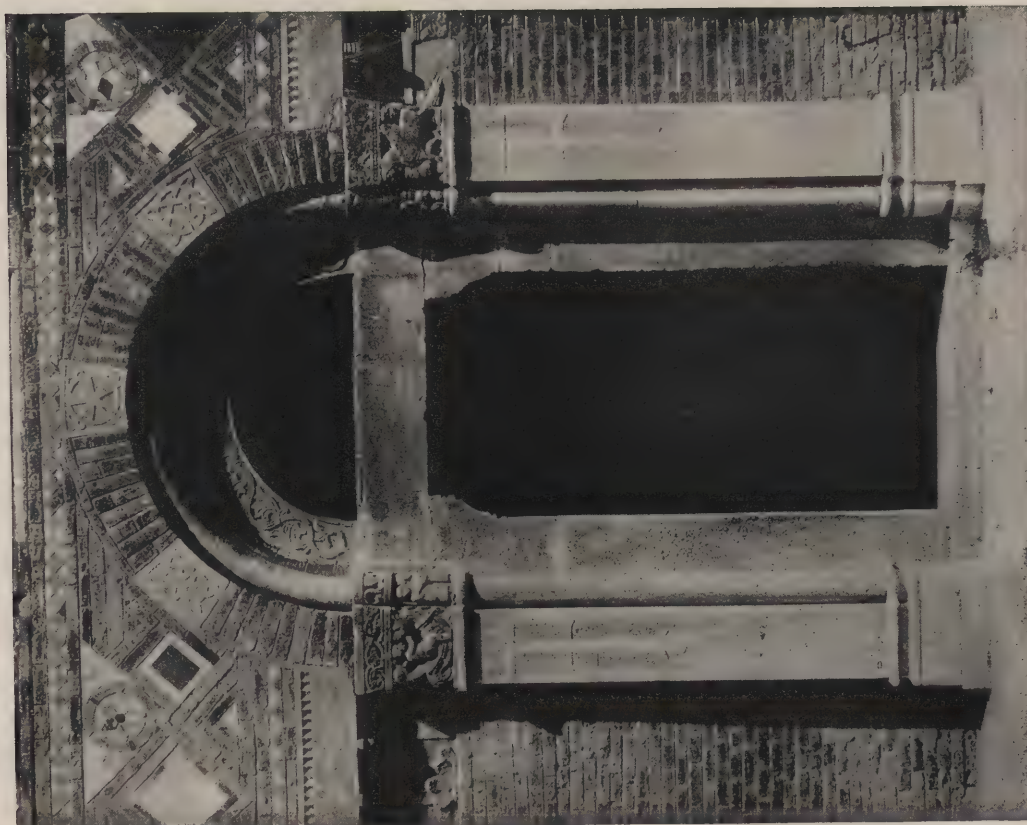


Detail of House for James A. Blair at Oyster Bay, L. I. Carrère & Hastings, Architects.

PENCIL POINTS



*Cathedral at Cremona, Italy.
About Twelfth Century.*



*Doorway of Church of Saints Peter and Paul.
San Stefano, Bologna, Italy.*

A VOCABULARY OF ATELIER FRENCH. PART V

BY RAYMOND M. HOOD

This is the fifth installment of a vocabulary which Mr. Hood, *Architecte Diplômé par le Gouvernement Français* and Chairman of the Committee on Architecture of The Beaux-Arts Institute of Design, is preparing especially for this journal. It will be of special value to students in the ateliers in this country as well as to those who may later study at the Ecole des Beaux Arts in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier. As it is believed that an attempt to indicate the pronunciation would be futile, no such attempt is being made here; the pronunciation should be learned from someone who speaks French correctly.—Ed.

L (Continued)

Lâcher: *v.*; to loose, to let go; also, to do carelessly.
Lapin: *n.*; a rabbit; also, a clever, resolute man; *poser un lapin*; to fail at a rendez-vous.
Lattis: *n. m.*; lattice.
Lauréat: *n. m.*; a person who wins a prize in a competition.
Lavabo: *n. m.*; wash-stand, wash-bowl.
Laver: *v.*; to wash; also, to render, or wash with water-color.
Lavis: *n. m.*; a rendering, a presentation of a drawing in wash.
Léché: *adj.*; overdone, too finished.
Lécher: *v.*; to complete a work with unnecessary care and pains.
Limon: *v. m.*; a string of a staircase.
Linteau: *n. m.*; lintel.
Loge: *n. f.*; a small hut, cabin or lodging; *arch.*, a small room or stall in which a student is enclosed to work alone.
Logement: *n. m.*; a lodging, a small apartment.
Logis: *n. m.*; a house.
Logiste: *n. m.*; a student admitted to a loge for a competition, usually applied to those doing the Prix de Rome competition.
Louche: *adj.*; cross-eyed; in a figurative sense, equivocal, slippery, tricky.
Loupe: *n. f.*; a reducing glass.
Loustic: *n. m.*; a joker.
Loyer: *n. m.*; rent.
Lucarne: *n. m.*; a dormer window.

M

Machin: *n.*; a thing, a what-you-may-call-it.
Maçonnerie: *n. m.*; masonry.
Main: *n. f.*; hand; *A La Main*, freehand; *Coup de main*, assistance, aid.
Mainlevée: *n. f.*; free-hand.
Mairie: *n. f.*; a town hall, a borough hall.
Maison: *n. f.*; a house.
Maîtrise: *n. f.*; skill.
Malin: *adj.*; roguish.
Malpropre: *adj.*; dirty.
M'amie: abbreviation for *Mon amie*.
Manie: *n. f.*; mania.
Manifestation: *n. f.*; a celebration; a demonstration.
Manille: *n. f.*; a game of cards similar to whist; a Manilla cigar.
Manillon: *n. m.*; the ace in the hand of manille.
Mansarde: *n. f.*; a mansard roof.
Maquereau: *n. m.*; a species of fish.
Maquette: *n. f.*; a small model, a rough study for a piece of sculpture.
Marche: *n. f.*; a step as in a staircase.
Marché: *n. m.*; market; à *bon marché*, cheap.

Marcher: *v.*; to walk; *slang*, to be game.
Marge: *n. f.*; border, margin.
Maronner: *v.*; to rage.
Marron: *n. m.*; chestnut; *slang*, crazy, funny.
Masse: *n. f.*; mass; *atelier*, the treasury.
Massier: *n. m.*; the student head of an atelier.
Mat: *adj.*; without polish, dull.
Mausolée: *n. f.*; mausoleum.
Mèche: *n. f.*; the wick of a lamp, fuse, lock of hair; *Il n'y a pas mèche*, it is impossible.
Médaille: *n. f.*; medal.
Megot: *n. m.*; *slang*, a cigar or cigarette butt.
Meneau: *n. m.*; mullion.
Mention: *n. f.*; mention; *arch.*, a passing mark.
Menuiserie: *n. f.*; cabinet work.
Menuisier: *n. m.*; a carpenter, a cabinet worker.
Métope: *n. f.*; metope of a Doric cornice.
Mètre: *n. m.*; metre, also, a measure the length of a metre.
Miché: *adj.*; *slang*, wealthy.
Mine de Plomb: *n. f.*; the lead of a pencil.
Mioche: *n.*; a little child.
Mise en Place: the arrangement of a drawing on a sheet.
Moche: *adj.*; poor, rotten.
Modillon: *n. m.*; a modillion.
Module: *n. m.*; a module, unit of measure for the proportions of a column.
Moellon: *n. m.*; a small stone used in masonry, or the aggregate of a concrete.
Môme: *n. f.*; *slang*, a little child; also, a woman.
Monôme: *n. m.*; a parade, Indianfile, by students.
Monstre: *n. m.*; a monster; *adj.*; colossal, wonderful.
Monte-de-piété: *n. m.*; a pawn shop.
Monter un Bateau: *slang*, to razz.
Mosaïque: *n. f.*; mosaic.
Motif: *n. m.*; motive; *arch.*, an element in a composition.
Moulage: *n. m.*; a casting.
Moulure: *n. f.*; a moulding.
Mufle: *n. m.*; *slang*, a disagreeable, stupid person.
Mutule: *n. f.*; mutule of a Doric cornice.

N

Navet: *n. m.*; turnip; *slang*, drawing, piece of work.
Negligé: *adj.*; neglected, insufficient; *Esquisse-négligée*, insufficient sketch.
Negrier: *v.*; *slang*, to nigger, to help on a drawing.
Noce: *n. f.*; marriage, accompanying celebrations; *faire la noce*, to go off on a tear, or a debauch.
Noceur: *n. m.*; a rounder, a person who leads a wild life.

PENCIL POINTS

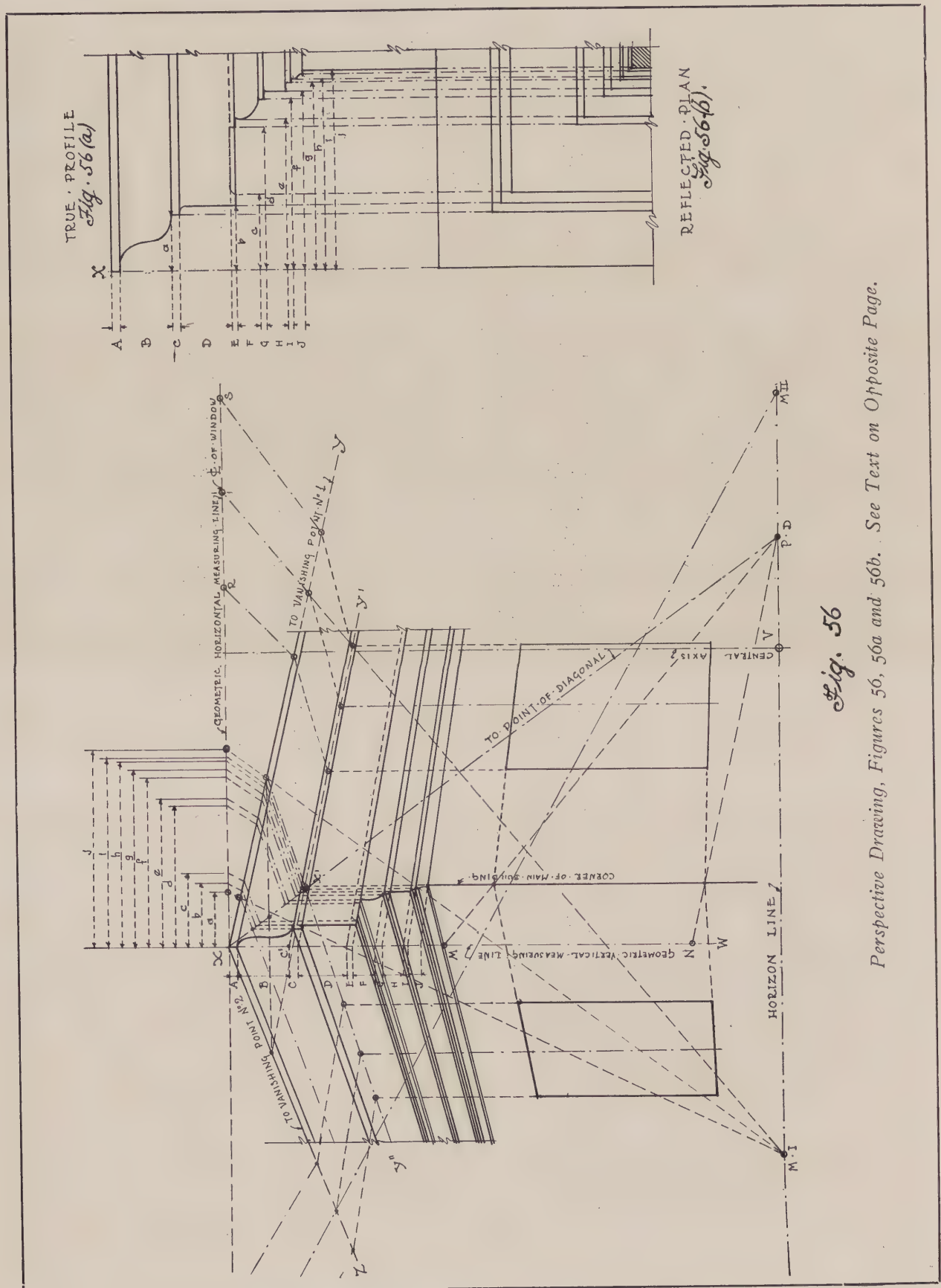


Fig. 56

Perspective Drawing, Figures 56, 56a and 56b. See Text on Opposite Page.

PERSPECTIVE DRAWING, PART XXIV

BY PAUL VALENTI

This is the concluding instalment of a serial article in which Mr. Valenti has taken the student step by step through a course in the direct construction or perspective plan method. Mr. Valenti, who is Instructor in Architecture at Washington University, St. Louis, Mo., is a graduate of The Royal Academy of Fine Arts of Brera, Milan, Italy, where he received the degree of Professor of Architecture. Mr. Valenti studied under Professor Ferrario, principal of the school of perspective at the Academy and scenographer at "La Scala," theatre in Milan, and under other distinguished masters. Upon the investigations and the ripe practical experience of these men, he has based the course which he has presented to the readers of this magazine. The method explained here, once it has been mastered, saves time and gives increased accuracy over the usual practice in laying out architectural perspectives instrumentally. This article began in the issue for June, 1920. All excepting the most recent issues are out of print.—Ed.

AFTER having considered the building in question as circumscribed by a solid, the extreme projection of which (in the horizontal sense) is the corona of the cornice, we may begin by placing point *X* (see true profile Figure 56a) tangent with the transparent plane (shown in perspective Figure 56). At this point trace a horizontal line representing the "geometric horizontal measuring line" (see construction of diagram and text of Figures 52 to 54, previous issue). Once the two vanishing points have been established, together with the point of the diagonal, and measuring point No. 1 on the Horizon Line (see diagrams and text mentioned above) proceed as follows: First:—Lay out a true profile of cornice mouldings as shown in true profile Figure 56a, plus a reflected plan as in Figure 56b. Second:—Drop a line from point *X* (Figure 56) and place dimensions of members of cornice as shown in true profile Figure 56a, that is: *ABCD EFGHI* and *J*, in the same scale or any other desired. Third:—From point *X* conduct straight lines to Vanishing Points Nos. 1 and 2 respectively, and one to the point of the diagonal all previously found and situated on the Horizon Line. Fourth:—From point *X* lower a perpendicular to a distance represented by *A* (see true profile Figure 56a). This represents the fillet of the cymatium. Fifth:—Measure off on upper geometric horizontal measuring line a distance equal to "*a*" (see true profile Figure 56a). From this point conduct a straight line first to measuring point No. 1 on Horizon Line, until it intersects line *XY*, thence a line to Vanishing Point No. 2 until it intersects the line of the diagonal. Drop a perpendicular from this point until it intersects a line conducted from point *c'* to Vanishing Point No. 1. Uniting the lower point of space *A* with the upper point of space *C* just found, with a graceful curve as shown in the perspective in Figure 56, we will obtain the mitred corner of the cymatium of the cornice directly on the diagonal plane. If we follow this process right through, taking each operation, step at a time, first establishing the vertical dimensions on line *XW*, conducting same to Vanishing Point No. 1, and secondly, establishing all the horizontal dimensions on geometric horizontal measuring line as shown in Figure 56,—that is, *abcde fgh i* and *j* from each of which a line is conducted first to Measuring Point No. 1, intersecting line *XY*, thence a straight line to Vanishing Point No. 2. This will in turn intersect the line of the diagonal. By lowering from these points

perpendiculars respectively until they meet their corresponding points found by operation No. 2 above mentioned, we are enabled to delineate a profile of these mouldings in the diagonal plane by uniting the points thus found with lines both perpendicular, curved or vanishing, according to the geometric or true profile (see Figure 56a).

Finally, from each of these points conduct straight lines to Vanishing Points Nos. 1 and 2 respectively and you will obtain the perspective of the cornice. (See Figure 56). These operations are very plainly illustrated in Figures 56, 56a and 56b, and can be easily followed.

Note that in finding the location of any unit on the main building, consideration must be taken of the cornice projection (and any other if such should exist) and the dimensions *must* be followed down to the plane of the main building or the surface to which this unit belongs.

For example: If we were to find the centre line of a window on the front wall of the building under consideration, first determine the location of this point on the geometric horizontal measuring line as shown (Figure 56). This, of course, will be determined by the distance of this point from the left-hand corner of the building in plan. From this point conduct a straight line first to Measuring Point No. 1 on Horizon Line until it intersects line *XY*, thence a straight line to Vanishing Point No. 2 until it intersects line *X'Y'* which represents in perspective plan the plane of the front face of the building proper and line *X'Y''* the side face of same. (See Figure 56). Lowering a perpendicular from this point we will obtain the centre-line of the opening desired in its correct plane and location in perspective, as called for in the geometric plan. Now in order to obtain first the width of this opening in perspective, together with its height, proceed as follows: Place both to the left and to the right of the centre-line on the geometric horizontal measuring line, the required width of this opening, (that is, half on one side and half on the other side of this centre-line). See Figure 56,—points *R S*. Following the operation, as was done in the case of the centre-line, and lowering perpendiculars from the two new points found on line *X'-Y'* we shall find the width of this opening in perspective. Establishing points *M N* on the geometric vertical measuring line, representing the height of this opening and its location in relation to the cornice, etc., conduct first

(Continued on page 37)

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ATELIER MEMPHIS.

THE first annual exhibition of the Atelier Memphis as a feature of the Architectural Exhibition of the Tennessee Chapter of the American Institute of Architects will be open to the public until August 1, at the Brooks Memorial Art Museum, Overton Park, Memphis. The atelier is proud of the fact that of the five analytiques submitted to the Beaux-Arts Institute of Design, three received mention and one first mention. Mr. Baird S. Cairns is Patron of the atelier.

Student work from other cities of the state forms an interesting part of the Architectural Exhibition and it is hoped that the showing made by the Atelier Memphis will stimulate the formation of ateliers in these other cities in the near future.

BASEBALL.

A BASEBALL game between the offices of Robert D. Kohn, Charles Butler and Associated Architects and Werner Nygren, Charles E. Knox and Associated Engineers was played Saturday morning, July 8th, 1922. The score was: Robert D. Kohn 16, Werner Nygren 10. After the contest all enjoyed a shore dinner at City Island. Other office teams desiring to book games should write to F. G. Seelman, care of Robert D. Kohn, 56 West 45th Street, New York City.

THERE are openings in the Department of Architecture of the Alabama Polytechnic Institute, Auburn, Ala., for the coming college year, for an assistant professor of architectural design and an instructor in free-hand drawing, water-color and clay modeling.

PERSONALS.

HARVEY W. CORBETT, of Helmle & Corbett, Architects, sailed on the Lapland, July 22, on a business trip to London. He will return in about six weeks.

PAUL LIVINGSTONE BOYD, Architect, has removed his offices from 5110 Warrington Avenue, to 6943 Limekiln Pike, Philadelphia, Pa.

BERNHARDT E. MULLER, Architect, has removed his office from 477 Fifth Avenue, to 527 Fifth Avenue, New York City.

CLARENCE E. DECKER, Architect, has removed his office from 306 Spreckels Building, to 3550 First Street, San Diego, Cal.

JOHN WARREN TEASDALE, Architect, has removed his office to the Times Building, St. Louis, Mo.

BRENTWOOD S. TOLAN, Architect, formerly of Fort Wayne, Ind., is now associated with DeCurtins & Rawson, Architects, Lima, Ohio, under the firm name of DeCurtins, Rawson & Tolan, with offices at 503 Opera House Block.

ARCHITECTURAL DETAIL

(Continued from page 31)

others if it does not show us how to obtain beautiful combinations in our work and above all if it does not stimulate us to try our hand in ever new and broadening directions. The illustration on page 32 is of the Cathedral of Cremona in Italy. Built about the twelfth century it is almost entirely of baked clay, the slender columns with their caps and the window sills and inserts at the center of the circular design, or rose, being the only exceptions. The bond of the main wall seems to be quite irregular, the mason having inserted headers in his runs of stretchers as the fancy took him. But around the openings this is changed and alternate headers and stretchers frame each one. The projecting band of the main ogive is what we to-day should call moulded brick. Then comes an ornament band that we should dub terra cotta except that it is of the same material as the other parts of the brick wall. There are certain firms that do this work in our own country, although I understand their activities in this direction are less great than formerly when the work was first introduced. This is a pity. It was brought about perhaps by the fact that a good deal of the moulded brick work done some years ago was not good in design and so there resulted a distaste for the material. It was a common fault at this period to make the detail too large in scale and with too great relief and much modern moulded brick had too uniform a color. Notice how flat the general surface of our cathedral is, yet how decorative. The little horizontal bands within the arch, no two alike, serve to break up the monotony of what would otherwise be a heavy surface. Unquestionably age has contributed to the softness and beauty of the whole, but I have no idea that originally the brick were all of the same color and value.

Before leaving this general subject of the texture of burnt clay it will be interesting to revert once more to the differences of texture that can be obtained in a single piece of terra cotta. The illustration on page 29 shows this in a close-up that clearly presents the sprayed texture of the mouldings, the light enamelled ground painted into the lower and broader band and the deeper color between the acanthus leaves of the cyma. This detail is for the Mobile Post-office and was designed in the office of the Supervising Architect of the United States Government. I wonder whether a smoothly enamelled projecting surface and rough textured ground might not make an even better design, though a little less ready of manufacture. In any event, these combinations offer some of the means of development in new expressions of architecture and are utilized too little. In the next article there will be a comparison with close-ups of different brick bonds, with varying sizes of joints and treatments. After that it may be possible to break away from this fascinating subject of texture and to take up a study of moulded and sculptured detail.

THE IDENTIFICATION OF MAHOGANY

MAHOGANY enjoys so high a reputation as a wood for interior finish and furniture that it is not surprising that a great variety of woods more or less similar in appearance or that can be treated to resemble mahogany are offered as mahogany, and it is not always easy to distinguish the true mahogany. A means of doing this is now provided in "The Identification of True Mahogany, Certain So-called Mahoganies, and Some Common Substitutes," by Arthur Koehler, specialist in wood structure, known as Bulletin No. 1050, United States Department of Agriculture.

This bulletin describes true mahogany and a large number of woods that have at one time or another been put on the market under the name mahogany. It states that some of these are closely related botanically to true mahogany and others look much like it, while some have only the most general resemblance, and no relationship which under the most liberal interpretation could entitle them to the name.

It also states that the woods now most commonly sold as mahogany in this country are true mahogany from tropical America, "African mahogany," and "Philippine mahogany."

PENCIL POINTS



HENRI GABRIEL MARCEAU.

HENRI GABRIEL MARCEAU, who has just been awarded the Fellowship in Architecture of the American Academy in Rome as a result of this year's competition, was born in Richmond, Va., June 21, 1896. He received his grammar school and preparatory school education at St. Ann's Academy, from which school he was graduated in June, 1914. In September of the same year he entered Columbia University School of Architecture in the Department of Extension Teaching. After two years he transferred his credits and began working under the scheme of combined college and architectural course at Columbia that leads to the degree of Bachelor of Architecture, receiving this degree in 1921.

Mr. Marceau's course was interrupted during the war, as he enlisted in the field artillery, serving as a cadet officer at Camp Taylor and subsequently receiving a commission in that branch of the service.

During several summers Mr. Marceau was employed by the architectural firm of Boring & Tilton and he is now working in their office pending his departure, in September, for Rome.

Early in Mr. Marceau's course at Columbia he was appointed evening assistant at the Avery Architectural Library, and held that position until his Senior year, when he was appointed assistant instructor in architecture in the Department of Extension Teaching. Last year Mr. Marceau also held a similar post in the regular school, working the remainder of the time with Boring & Tilton.

Last summer he went over to France in charge of the Verdun unit of the American Students' Reconstruction Association. The unit was composed of architectural and engineering students representing eleven universities. The work was to make plans and surveys and help rebuild communal buildings in the front line areas. Upon his return he was elected secretary of the Association, a post he still holds.

During his course he was taken into the fraternity of Delta Upsilon by the Columbia Chapter.

Mr. Marceau tried for the Fellowship last year and was placed in the finals.

He attributes part of his success in this year's compe-

tion to the broadening of his vision in an architectural sense that came from his work in France last summer.

DALLAS ARCHITECTURAL CLUB.

THE new year in the Club has started with the following men elected as officers for the coming year: Walter C. Sharp, President; Dudley S. Green, First Vice-President; W. M. Kleuser, Second Vice-President; A. E. Thomas, Secretary; Leland Hodges, Treasurer; Ralph Bryan and W. L. Love, Members of Executive Board; D. F. Coburn, Otto F. Lang, and C. C. Bulger, Advisory Board.

The Annual Banquet was held at the Jefferson Hotel Roof on the night of the sixteenth and was attended by about seventy-five members. Much enthusiasm was shown and the coming year should see many big things done in the Club. The Birch Burdette Long Sketch Competition Traveling Exhibition was viewed by the members at the banquet. To say the least it was very interesting as all the sketches were very clever pieces of work.

The big event of the evening was the distributing of the Year Book. We of the Dallas Architectural Club feel very proud of this book. It is excellently put up and is a credit to this Club. Next year we hope to put out a bigger one and if possible a better one.

Summer is now upon us in full force and we are searching about for cool spots where we can carry on our daily grind of pencil-pushing. Our meetings from now on will be for the most part swimming parties, as last summer we found that we could keep cool and attentive to the words of our worthy president while we were floating around on our backs in a certain indoor pool here in Dallas.

Would that we could move the Hudson River or Rye Beach or some of those wonderful summer resorts down here to Dallas.

We would like to hear what other clubs are doing in the way of summer meetings. Let's hear from you.

STEAM HEATING

UNDER the title "Steam Heating" a valuable book on this subject has been compiled by the general engineering committee of Warren Webster & Company, Camden, N. J. Price \$3.25 net. The work is in two parts, bound as one volume. Part One treats thoroughly of the conditions and principles involved in steam heating, going into detail to an exhaustive degree that makes it a highly important contribution. Special articles and helpful suggestions have been contributed by John A. Serrell, by The General Engineering Committee, and by John B. Dobson, Ralph T. Coe, William Roebuck, Russell G. Brown, Harry E. Gerrish, Howard H. Fielding, and others.

Part II is devoted to Webster steam specialties and their application in a thorough manner, adding very greatly to the practical value of the work. The book is 8½x10½ in., contains 367 pages, is well bound in cloth and is fully illustrated. It is a manual of practical data that covers the subject in detail, conveniently arranged for reference, and is well suited in form to be included in the architect's library.

PERSPECTIVE DRAWING

(Continued from page 35)

straight lines from points *M* and *N* respectively to the point on the *diagonal* on the Horizon Line until they intersect the corner of the main building (see Figure 56), thence straight lines conducted to Vanishing Point No. 1 will intersect the two perpendiculars just found (representing the width of the opening as explained above) determining in this way the upper and lower limits of the opening in question.

It can readily be seen that by reversing these operations on the *left side* of point *X* on the horizontal geometric measuring line and using the *opposite* measuring point and Vanishing Point, a penetration or opening on the other wall can be found in perspective accurately and in the same simple manner.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION

PART V.

By OTTO GAERTNER

In this series of notes Mr. Gaertner, of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Squash Court Construction—There are two kinds of squash courts, those for squash racquet and those for squash tennis. Squash racquet is played with a hard ball and squash tennis with a soft one. Racquet is played in a court the walls and floor of which are finished with cement. Squash tennis is played in a wood finished court but may be played in a cement finished one. The players have their own likes and dislikes, and the draftsman should consult the client regarding the finish to be used. The writer recently heard of a racquet court that was built with a wood finish. There are also differences of opinion and choice regarding the sizes of the courts and the individual clients should be consulted regarding the dimensions. Sometimes they are made any size that the space will permit, and sometimes a client wishes to have his court made to the same dimensions as those of some other courts upon which he plays. On account of the difference in the play of the ball in the different sized courts, the various clubs are now getting down to more uniform dimensions. The squash racquet courts are now generally made thirty-two feet long, eighteen feet wide, and sixteen feet high; and the squash tennis courts are generally thirty-two and one-half feet long, seventeen feet wide, and fourteen feet high, this being the size approved by the National Squash Tennis Association. In addition, both types of courts should have their playing walls, which are the walls opposite the doors, made the same heights as given above for the courts. The side walls should be twelve feet high, and the racquet court should have its rear wall, where the door occurs, eight feet high, while the tennis court should have its rear wall from nine feet to ten and one-half feet high. The heights of the courts given above are the unobstructed heights and the dimensions refer to the clear playing surfaces. Additional allowances must be made for the thicknesses of materials, etc. The rear walls and side walls are usually extended over the playing height to the height of the playing walls.

The success of any court depends greatly upon the speedy and uniform rebound of the balls from the walls and floor, and to attain this it is important that all parts of the walls and floor are of the same construction, both as to the finished materials and as to the rough work underneath. The least difference may make enough difference in the play of the ball to have the court condemned by some players and sometimes a player's knowledge of an existing difference in the construction will make an imaginary difference in the play of the ball, making the court unpopular with him. There are firms who make a specialty of wood finished courts, and others for cement finished ones. It is advantageous to have the work done by experienced contractors, especially the cement finish which must have just the proper amount of troweling and no more. Too little troweling will result in a weak surface, and too much will leave a crazed surface that will disintegrate under the rough usage it will receive in play.

The rough construction of the courts may be whatever it will, provided that the finished materials can be properly applied on such a foundation. In the case of the wood finished tennis court, the foundation work should be of two-inch by four-inch timbers thoroughly air and kiln-dried and rigidly fastened to the construction of the

building. The finished materials should be strips of very clear, kiln-dried maple, though hard yellow pine has been used, one inch by two inches for the side walls, and one inch by three inches for the playing and rear walls, and the floor. It should be carefully milled, tongued and grooved, and should be laid with the narrow face exposed. Sometimes in order to save expense, the one inch by two inch material is used throughout, but this had better be avoided. The strips should be run lengthwise on the floor, horizontally on the side walls, and vertically on the playing and rear walls. Sometimes they are laid horizontally on these walls also and sometimes the space behind the strip and between the two inch by four inch nailing pieces is filled with clean, dry sand. The play lines on the walls and floor may be formed by an inlay of wood of another color, or they may be painted or stained before the shellac is applied.

In the case of the cement finished courts, the walls must be substantial and either good hard common brick or hard-burned terra cotta blocks, no porous or semi-porous blocks should be used, laid up in mortar composed of one part Portland cement to two and one-half parts of sand. The brick should be well bonded and have the joints slightly raked out, English bond being preferably used. The terra cotta blocks should be set upright with the open ends at the top and bottom. If the walls are exterior walls, they must be made watertight on the outside, and six-inch or preferably eight-inch blocks should be used, stuccoed on the outside. In laying up these walls allow one inch for the thickness of the cement finish. This finish should be applied in three coats after the walls have been well wet down with a hose. The scratch coat should be composed of one part Portland cement and two parts of clean, well screened and washed sand, free from loam and vegetable matter. This coat should be rodded and floated to an even surface and scratched in both directions with a forked tool having prongs one-half inch on centers. It should be allowed to set for about one week, and it should be well wet down before the second coat is applied. The second coat should be of the same mixture as the first coat, and applied and scratched in the same manner. The second coat should also be allowed to dry out for about one week and should then be thoroughly wet down before the third coat is applied. The third coat should be composed of one part Portland cement and two parts of clean, sharp, white bank sand, screened through a fine mesh screen, and to this mixture should be added about six or seven per cent. of hydrated lime. This coat should be thoroughly rodded and floated, and care should be exercised to delay the initial set by keeping the surface thoroughly wet. After the mortar has started to set, about six or seven hours after it is applied, it should be troweled and brushed simultaneously and kept drenched with clean water. The troweling and brushing should only be done until such times as the finish begins to polish. Each coat on each wall should be completely finished in one operation without interruption. Any plaster occurring above the twelve feet high playing surfaces on the side walls, the sixteen feet high playing surface on the play wall, and the eight feet high level of the rear wall, may be plastered with three coats of lime plaster or any other finish. The same applies to the ceiling or that part of it that does not form a skylight.

If the floor of the court is placed directly on the ground, fill in with about six or eight inches of cinder concrete to a level five inches below the finished floor, after having made the necessary provisions against water. This may require a layer of stone concrete with waterproofing on top and a mortar protective coating and then more stone concrete, depending upon the conditions involved. But in any case, there should be four inches of stone concrete with a one-inch-thick finishing course for the floor. This concrete should be composed of one part Portland cement, three parts clean, sharp, well-screened sand, and five parts of clean-screened broken stone or

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gravel, and sufficient water to make a mixture, all carefully mixed, laid immediately, and rammed thoroughly. The finishing course should be composed of one part clean, coarse, gritty sand and one part grits, free of dust, and one part Portland cement, all thoroughly mixed dry until uniform in color, showing no streaks or patches, after which enough water should be added to saturate the mixture which should then be thoroughly mixed again. This finishing course should be straight edged to a true and even surface, floated well with a wooden float and troweled, a second troweling being applied when the surface has set sufficiently to finish hard and smooth. An approved hardener should be added to the finishing course, either integrally or to the surface just before troweling, in accordance with the manufacturers' directions. The entire floor should be laid so as to avoid cracks from expansion and contraction, or from movements in the structure. This is important and special care should be taken to prevent it. When a crack occurs, the edge on one side of it sometimes raises above the edge on the other, so that a player sliding on the floor is likely to stumble against the higher edge and be thrown headlong against a side wall of the court. Reinforcement mesh may be placed in the concrete, the concrete may be laid in alternate square with tongued and grooved edges, or any other method may be employed to help prevent it. When the court is on an upper floor, the concrete of the court floor being thick enough, a layer of waterproof paper may be laid over the structural arch or slab before the concrete of the floor is laid. This will help to avoid cracks due to movements in the building. When laying the floor, the joints should be placed so that they will occur under the play lines that will be painted on the floor, where they will be least noticeable if they should open. Generally, four monolithic slabs are thus formed. The joints should be cut completely through both the rough concrete and the finishing course.

On the play wall, extending the full length of the wall, and with its top edge twenty-four inches above the finished floor, is a tell-tale. This is a metal plate which is erected so that when it is struck by a ball in playing, a distinctly different sound is made from that which is made when the ball strikes the floor or any other parts of the walls. In the case of the wood finished courts, this tell-tale is often erected so that it can readily be removed if the court is to be used for playing hand ball. In the cement finished racquet courts, however, it is permanent, and projects two inches from the finished wall face above. The top of the projection thus formed, is splayed upward one-half inch to meet the face of the wall. The tell-tale is made of stiffened number sixteen United States Standard gauge galvanized iron applied over sheathing or three lines of grounds extending the full length of the play wall and with soldier pieces at intervals. Advantage is taken of the tell-tale to aid in ventilating the court. One or more cast iron registers of square lattice design are set into it. If only one is provided, it is generally sixteen inches high and about sixty inches long, and is set on the axis of the court. If two registers are used they are made about sixteen inches high and thirty-six inches long, and are placed equidistant from the axis of the court. However, the entire length of the tell-tale may be taken up with registers allowing only sufficient space between them for the construction of the wall. The registers are provided with adjustable louvers and fresh air is conducted to them by means of openings through the wall behind them if it is an exterior wall, and by means of fresh air ducts from other parts of the building if it is an interior one.

(To be Continued)

THE Students' Edition of The Georgian Period just published by the U. P. C. Book Company, Inc., New York City, has been prepared to meet the requirements of the architectural student and junior draftsman and others who desire an abridged edition of that well-known monumental work, "The Georgian Period." The Students' Edition of the Georgian Period comprises one hundred plates, 10x14 in., and 24 pages of text. The price is \$15.00 postpaid. It is in the form of a portfolio, attractively bound.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Burnt Clay Products—Handsomely illustrated portfolio with color plates, showing elevations and details of residences with especial reference to the application of burnt clay products. Should be in every reference library. 50 plates. 10 x 12. B. Mifflin Hood Brick Co., Atlanta, Ga.

Copper Roofing—Specification data with four full-page detail sheets showing flashings and methods of laying various types of roofs, gutters, eaves troughs, etc. 8½ x 11. 32 pp. Copper & Brass Research Ass'n., 25 Broadway, New York.

Brass Pipe for Water Service—Illustrated specification book, tests, layouts, tables of sizes and weights. 8½ x 11. 30 pp. American Brass Company, Waterbury, Conn.

Monarch Casement Hardware—Illustrated specification booklet 27 C-2. Detail drawings showing correct methods of installation for casement, transom and pivot windows. 8½ x 11. 24 pp. In folder ready for filing. Monarch Metal Products Co., 5020 Penrose St., St. Louis, Mo.

The Tale of a Clam—A story about lime. 8½ x 11. 16 pp. The Ohio Hydrate Supply Co., Woodville, Ohio.

Specification for Cut Indiana Limestone—Condensed specification forms covering various classes of limestone work. Loose leaf. 8½ x 11. Indiana Limestone Quarrymen's Ass'n., Bedford, Ind.

Steel Furniture for the Modern Business Office—Catalog illustrated in color showing complete line of metal equipment for all uses, including units for maps, plans and large drawings. 5 x 7½. 90 pp. General Fire Proofing Co., Youngstown, Ohio.

Sylphon Heating Specialties—Technical Hand Book containing valuable tables, specification data, etc. for all types of steam and hot water heating. 3½ x 6½. 144 pp. The Fulton Co., Knoxville, Tenn.

The Book of Vermont Marble—A reference book for the architectural profession, illustrated. Sectional drawings showing details for windows and doors, cornices, parapets, terrace work, corridor treatment, wainscoting, stairs ceilings, etc. 8½ x 11. 70 pp., with supplementary portfolio containing 16 full page color sheets showing various varieties of Vermont Marble. Vermont Marble Co., Proctor, Vt.

The Lunken Window. Two Portfolios containing typical installation details of light and heavy construction, showing in addition to window details many other features of construction in various types of buildings, both steel and frame. 24 plates 8½ x 11. Architectural Department, The Glidden Window Co., Cincinnati, Ohio.

Locks and Builders' Hardware—New catalog showing complete line of builders' hardware. Thousands of illustrations. 485 pp. 9 x 12. P. & F. Corbin, New Britain, Conn.

Hoffman Casements—Portfolio of detail drawings and specification data dealing with casement windows, screens, shutters, curtains, weatherstrips, etc. 34 pp. 8½ x 11 in. Including one large drawing 23 x 32 in., showing full-size details of millwork for casements. Andrew Hoffman Mfg. Co., 28 East Jackson Blvd., Chicago, Ill.

Architects' Specification Hand Book—New and revised edition of the Truscon Specification Book containing complete specifications on water-proofings, damp-proofings and technical coatings for all uses. 104 pp. 8½ x 11 in. Truscon Laboratories, 1628 Caniff St., Detroit, Mich.

Brascolite Bulletins—Architectural series numbers 1, 2 and 3, dealing with the lighting of hospitals, banks and office buildings, schools, colleges, and Y. M. C. A. buildings. Illustrated bulletins showing typical installations and containing much useful data on illumination. 8x10½ in. 48 pp. Luminous Unit Company, St. Louis, Mo.

Improved Mechanisms in Builders' Hardware—A very complete catalogue has been issued by The Oscar C. Rixson Co., 101 Park Ave., New York City, showing detail drawings, and instructions for installing mechanical builders' hardware such as casement hinges, casement operators, hinges and pivots, and overhead door checks. It also contains other information of interest. The catalogue is 6x9 in. and contains 58 pages.

QUERIES

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, Metropolitan Tower, New York City.

Question—Can you recommend a portfolio of desirable exteriors and interiors of country clubs? L. J. D. **Answer**—We do not know of any such portfolio. The best material on club houses has appeared at intervals in the architectural magazines, describing clubs upon completion. We would advise you to look up such articles at the nearest large public library where they probably have a subject index of the articles in their files of back numbers of magazines. In February, 1917, *Architectural Review* you will find illustrations of several club houses and in February, 1913, *Architectural Review* the Golf Club at Groton, Conn., was illustrated.

Question—Who are the publishers of the book "Modern Building Superintendence and the Writing of Specifications" by David Emerson? Where can I obtain a book containing contract forms and dealing with general business practice in an architectural office? L. A. L. **Answer**—"Modern Building Superintendence" is published by Charles Scribner's Sons, New York City. "Institute Forms" and "Handbook of Architectural Practice" may be obtained from E. C. Kemper, American Institute of Architects, The Octagon, Washington, D. C.

Question—Will you please tell me names of books or sheets of architectural details drawn to scale for study and handy reference? R. I. S. **Answer**—"Details of Building Construction" by Clarence A. Martin, also a book of details by Radford. We would suggest that you write to Mr. Frank Snyder, 463 First Ave., Pelham, N. Y., for information in regard to his architectural details.

THE AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following: "On the 20th of May we had our annual exhibition; in spite of a strike on the tram lines, more than four hundred people came that afternoon. Compositions by the fellows in music at the Academy were played for the first time in our history at an annual exhibition. The music took place in the students' dining room. Next year we may perhaps give it in the courtyard, placing the musicians under one of the arcades and seating the people on the grass in the middle of the court—at least, this is a suggestion offered by Mr. Damrosch, who was here for four days after the exhibition. Tea was served out in the court-yard, and the sight was altogether most attractive. I have sent Mr. Guernsey a catalogue of the exhibition and in a few days I expect to send him photographs of the rooms. Among the people present were Senator Phelan of California and Mr. Paul Cravath of New York.

"The King's visit could not take place before the 31st, as he was kept in the north of Italy upon important matters. He came with a general, an admiral, and two aides. The American Ambassador and I met him at the gate and marched with him into the vestibule, where the Embassy Staff and the people belonging to the Academy were introduced; then we proceeded into the salon. Mr. Lamond made a short speech about the new department

of music, and then Hanson, Fellow in Music, played a piece which he had specially composed in honor of the King, and Sowerby, Fellow in Music, followed him with a composition for the piano and violin. I presented the King with a bound copy of Hanson's piece. Then we walked through the salon, billiard room and the dining room, looking at the exhibits, then through the library where everyone signed the visitors' book. The next step was to investigate the publications by members of the School of Classical Studies. Finally, we looked at Man-ship's new fountain in the court-yard and had our pictures taken grouped around it. I will send these photographs within a few days to you. We were informed of the King's visit at half past seven on the previous evening and as he came at ten o'clock the following day, we had to hurry a bit. However, the Ambassador and all his staff, the Sindaco of Rome, and the reporters of the Associated Press and Stefani were all informed in time to be present. Also fresh decorations had to be put up, a piano moved from the Villa Chiaraviglio and the violinist engaged. If I had not had a machine, this could not have been done.

"Professor Van Buren is at work cataloguing the library according to artists and places. He has two men working under him at present with money subscribed by Professor Whicher, Professor McCrea and Professor Fairbanks.

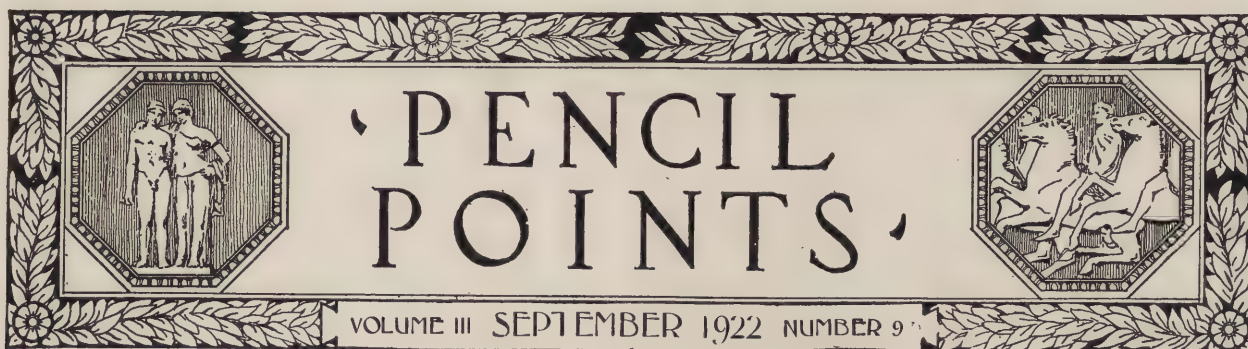
"Professor Curtis has secured a promise of \$1,260 from Professor Joseph Hoppin toward the publication of the Memoirs.

"I have some preliminary estimates for the McKim-Morgan memorials designed by Mr. Kendall and I am scouring Europe for the very best marbles. Both memorials together will cost more than 100,000 lire. I think that we will certainly be able to get the work done with not more than \$3,000 for each memorial. I am going to send the estimates and samples of marble to Mr. Kendall within a few days.

"Professor and Mrs. Whicher, and Professor and Miss McCrea gave a large tea at the Academy for the friends who have been kind to them in Rome this year and for the members of the Academy. Every one enjoyed himself immensely.

"I am sorry to say that Mr. Mead wrote me from Paris that Mr. Walters, who is travelling with his bride in France, would not be able to come to Rome. I wish he could have come either for the exhibition or for the King's visit. We expect Mr. Blashfield about June 10th. He is coming to look over the Academy and also to study the question of the mosaics for your church in Washington. I hope to be able to carry him in triumph from the station to the Gianicolo and have him stay with us at the Villa Aurelia.

"Mr. and Mrs. Cortland F. Bishop have visited the Academy. They saw the exhibition and I likewise had an opportunity to take them over the girls' quarters and give them a tea at which the Classical Staff was present. They have a daughter in Vassar who may apply for a fellowship at the Academy in the future."



AMERICAN ARCHITECTURAL EDUCATION

ARCHITECTURAL education in America today is being conducted on an admirable system that has developed logically, that meets the conditions, and is being further developed. We may be proud of the progress made in architectural education, particularly in the past score of years.

Mr. Hastings, in his address before the Royal Institute of British Architects (reported in the *Journal of the R. I. B. A.*), upon the occasion of the presentation to him of the Royal Gold Medal recently pointed out that owing to the untiring efforts of the Beaux-Arts Institute of Design a centralized, co-ordinated system of competition or comparison between our schools and colleges, similar to that which obtains physically in intercollegiate games, has been brought about—practically all of the colleges from the Atlantic to the Pacific receiving the programs, simultaneously, and sending the work of their students all solving the same problem to be judged at the Beaux-Arts Institute of Design in New York.

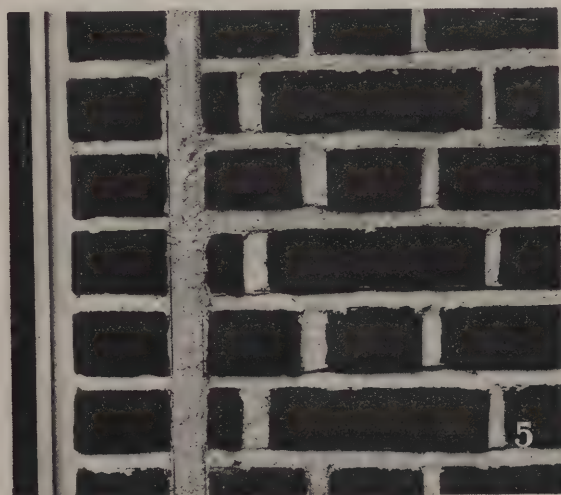
Of the greatest significance is the recognition accorded this achievement in American architectural education by the report of the Committee on Education of the American Institute of Architects presented at the Convention in Chicago. From this report we quote as follows: "In reviewing the development of architectural education, your Committee has frequently had occasion to comment upon the splendid work of the Beaux-Arts Society, now known as the Beaux-Arts Institute of Design. Some years ago the Committee urged the creation of intercollegiate competitions, believing that, first, the solution of the same problem by a great number of students in different sections of the country was of interest, and second, that emulation among the colleges stimulated to greater effort. While these intercollegiate competitions have proven difficult to bring about, today most of the schools use the programs of the Beaux-Arts Institute of Design more or less. This results in placing the work of many of the colleges in competition with the work of the ateliers all over the country. We understand that the Faculties are generally agreed that a more general use of these programs is to be desired and we have been present at informal discussions of representatives of certain of these Faculties where a closer co-ordi-

nation of the schedule of the Beaux-Arts Institute of Design with the colleges has been urged. We now understand that steps have been taken looking towards the writing of programs by a joint commission of the Association and the Beaux-Arts Institute, and we sincerely hope that this may lead to a closer co-operation between the schools and the Beaux-Arts Institute of Design. It seems to us that such a development cannot fail to be helpful.

"The American Institute of Architects should, we think, recognize the admirable work of the members of the Beaux-Arts Institute of Design. The great responsibility entailed upon the Chairman of the Committee on Education of that body in the conduct of this national work has perhaps never been fully understood. The unselfish devotion to the cause of education, of men like Lloyd Warren, Henry Hornbostle, Bosworth, and many others, is worthy of our every admiration. The rank and file of the Beaux-Arts Society have all contributed their mite under the leadership of these men. All the annual receipts from dues in the Beaux-Arts Society are appropriated to the support of the educational work of the Beaux-Arts Institute of Design. From its early beginning as a group of men interested in the teaching of architecture only, it has now developed into a property-owning institution conducting some fifty-two ateliers in different sections of the country for instruction in architecture and with courses in sculpture, mural painting and interior decoration.

"The Paris Prize, a scholarship entitling the winner to study at the Ecole des Beaux Arts in Paris, is given annually by the Society of Beaux-Arts Architects, entitling the winner to admission in the first class at the Ecole and providing him with the means of residence for two and a half years. He is during that time the guest of the French Government, receiving instruction and all the privileges of membership in the School gratuitously. The American Institute of Architects has never recognized the excellence of this work. It has never assisted in its support financially, nor has such aid ever been solicited. We believe that the time has come when the Institute should recognize the success of the Beaux-Arts Institute of Design.

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Close-up Photographs of the Brick-work of Some Interesting Buildings. See Text Beginning on the Opposite Page.

ARCHITECTURAL DETAIL PART XVII

BY JOHN VREDENBURGH VAN PELT

This is the seventeenth instalment of an article in which Mr. John Vredenburg Van Pelt, formerly Professor in Charge of the College of Architecture, Cornell University, Architecte Diplômé par le Gouvernement Français, and author of "Essentials of Composition," will discuss the designing of good architectural detail and point out the means by which the ability to produce good detail can be developed. Reproductions of detail drawings from some of the best architectural offices will accompany this article and the publication of this series of drawings will be continued after this discussion of the subject has been completed—making a valuable feature of this journal indefinitely.

THE articles of this series that treated stone texture giving the number of bats to the inch and similar useful particulars were the cumulative result of earlier more or less fruitless efforts on my part to obtain data under the impulse of immediate need for the production of effects that I wished to secure in the stone work of a building in course of construction. In specifying brick-work, I have felt the same uncertainty and have found the same dearth of practical guides that I encountered when trying to define the method of producing a particular stone value. I have been brought up standing in the effort to visualize the appearance of an ordinary joint in ordinary common brick laid in running bond, wondering whether I ought to tell a draftsman to use a $\frac{3}{8}$ inch, $\frac{1}{2}$ inch, or $\frac{5}{8}$ inch joint and to adopt a $2\frac{5}{8}$ inch, $2\frac{3}{4}$ inch, or $2\frac{7}{8}$ inch coursing in laying out his elevation. Futilely, have I pulled out photograph after photograph and in the face of complete absence of information, have tried to guess the size of the joints. Not two years ago I settled on a $\frac{5}{8}$ inch joint that I wished I had made $\frac{3}{8}$ inch as soon as the wall was up four feet and it was too late to change. So I personally expect to find the following series of illustrations useful and hope they may also be of some service to the reader.

I have divided our study into two broad groups. The first includes brick whose textures range from the smooth, regular, re-pressed brick to swelled, warped in outline, sandy or cracked surface brick and it includes the usual makes of common brick. The second is made up of "rough texture" brick, the so-called "tapestries" from rain washed to the rug mixtures that beside being rough have on the surface a series of close definitely scored lines.

As has been suggested in our former talks about

brick, smooth brick generally require a narrower joint than rough ones; smooth brick a tooled or struck joint, while the joints between rough brick often have grit in the mortar to roughen them; and usually smooth brick are better with a joint that is

not too greatly raised beyond the surface or depressed, while rough brick may have a joint raked as deeply as the width of the joint itself or even more.

On page 10 are reproduced photographs of six examples of work that falls within our first group. In each case the joint has been smoothed with the trowel or jointer, although in that of the Grolier Club, with its wide joint and uneven brick there is

enough coarse grit in the joint to roughen it. The first example from a residence in East 61st Street, New York, probably a score or more years old, is of a very regular brick, apparently re-pressed, laid in Flemish bond with a practically flush joint of white mortar $\frac{1}{8}$ to $\frac{3}{16}$ of an inch wide.

This might be acceptable for a very neat little city residence such as the marble trimmed Philadelphia house, but necessarily the resulting wall effect is flat, the white lines are straight and thin and there can be little color vibration. In some of the New York so-called "Renaissance" houses the same brick and joint with black mortar was used extensively during the latter part of the nineteenth century. That these houses were not all good does not preclude the possibility of a beautiful result from use of the thin black joint.

Example No. 2, is a portion of the garden wall of the Knickerbocker Club of New York, southeast corner of 62nd Street and Fifth Avenue, Delano & Aldrich, Architects. The brick is very like a carefully selected hard-burned common red brick and it is laid up in Flemish bond, the stretchers of the



Detail of Brick-work, House for James Byrne, Esq., at Oyster Bay, L. I. Grosvenor Atterbury, Architect.

PENCIL POINTS

alternate rows coming directly over each other. The joints of white mortar struck smooth and flush with the face of the brick are about $\frac{1}{4}$ inch wide, for the beds, the build or vertical joints apparently slightly narrower. Whether or not this is intentional, I do not know, but in an upper wall, perspective would tend to make build joints look wider than bed joints that are really of the same size.

This type of joint and brick is peculiarly expressive of Colonial and the particular example is one of the best of that style in New York City. Well may it be, for it is the work of a firm noted for its mastery of the style.

Example No. 3, the Brierly School on Park Avenue, No. 60 East 61st Street, New York, is also authoritative, as it was designed by McKim, Mead & White for a Colonial building. The brick appears to be a red Harvard, $2\frac{1}{8} \times 7\frac{3}{4} \times 3\frac{1}{2}$ inches, and it is laid up in Dutch cross bond, stretchers and headers in alternate rows, each stretcher centering on the joint between the stretchers next above and below. The joints are of white mortar and average $\frac{3}{8}$ of an inch wide although they really vary from $\frac{1}{8}$ inch to $\frac{1}{2}$ inch. The build joints of the headers space a little wider than the beds, while the stretcher build joints are narrow. A peculiarity of the joints is that they were slightly pressed back with a jointer from the face of the brick so that the edge of the brick is sharply and cleanly defined and the joint is smooth. To obtain this clear-cut effect it would be safe to clean down the wall shortly after it has been laid up unless, of course, a soft lime mortar that would wash out were used.

Example No. 4, is a residence at 19 East 62nd Street, New York, the brick being a red brick similar to a Harvard, laid in English bond with white joints $\frac{1}{2}$ inch wide of white mortar struck flush. Here the build joints do not vary greatly from the beds. Comparison of this and the preceding example impresses upon us the necessity of selecting for either English or Dutch bond a brick whose dimensions will lay up with the relation of build and bed joints we desire and that, for a joint of a predetermined size.

Example No. 5, a residence of 22 East 62nd Street, New York, is in a sort of red Harvard of a very hard variety, the dimensions of which are $2\frac{1}{8} \times 7\frac{1}{2}$ inch. They are laid up in Flemish bond with a frame of headers around the windows. The joints of white mortar are $\frac{5}{8}$ inch wide and slightly weathered, that is the trowel is run along the joint, inclined at an angle so that the face of the joint slants back from the brick at the joint's bottom to the disengaged under-face of the brick above. In this case, the slant was not accentuated and the build joints are practically flush. A build joint that I prefer for this work is obtained by giving a double stroke with the trowel so that the vertical edges of the brick are also disengaged and although the middle of the vertical joints will be higher than the edges, no marked shadow occurs across the bottom of the joint. A weathering of 60 degrees I have found very acceptable. In this building the continuous vertical joint at the edge of the headers that

frame the openings is $1\frac{1}{8}$ inch to $1\frac{1}{4}$ inch wide.

Example No. 6, the last on page 10, is very interesting. It is part of the wall of the Grolier Club, 47 East 60th Street, New York, by Bertram Grosvenor Goodhue. The brick, somewhat like a red Harvard, with black clinkers and swelled spots, are $2 \times 8 \times 3\frac{1}{2}$ inches but quite irregular in shape. They are laid in Flemish bond with a cream-colored mortar having in it grit to make it rough. The joint is $\frac{3}{4}$ inch wide and weathered back enough to give a definite shadow along the top of most of the bed joints. Some of the vertical joints have been weathered to the left, that is, with a direct right-hand stroke.

On page 11 is a charming bit of irregular brick work. It is from the house of James Byrne, Esq., at Oyster Bay, L. I., and Grosvenor Atterbury was the architect. The brick is red brown, with headers, all of standard size, but laid on edge, probably a wall eight inches thick with holes throughout the interior, each header running through. The brick texture is similar to that of common brick, but the color varies and the shape is less regular than that required for common brick. The joint $\frac{3}{8}$ inch wide is black.

This brings us to the end of a comparison of the usual widths of joints as they appear in our first division of brick work, those of smoother texture. It will be interesting to see how the rough texture of the second division affects this, which we shall endeavor to do in the next installment of this article.

PRIZES FOR CLOCK CASE DESIGNS.

TO AWAKEN interest in the designing of clock cases a competition with prizes aggregating \$1,200 is being conducted by the Cloister Clock Corporation of Buffalo, N. Y. The prizes include three first prizes of \$250 each, three second prizes of \$100 each, three third prizes of \$50 each and nine Honorable Mentions. The competition conditions describe three types of clock case designated as "Class A," "Class B," and "Class C," for which designs are wanted. Each class is to be judged without regard to the other classes and a contestant may win more than one prize. The contest closes 5 P. M., October 23, 1922. The jury of award consists of Mr. Richard F. Bach, Associated in Industrial Art, Metropolitan Museum of Art, New York; Mr. Charles Dana Gibson, New York; Mr. Albert M. Kohn, of the firm of Theodore A. Kohn & Son, Jewellers, New York; Mr. C. Matlack Price, Editor and Art Critic, New York, and Mr. Russell F. Whitehead, Secretary of the Architectural League, New York. The competition is open to everyone and a contestant may submit any number of designs. Announcement and conditions of this contest will be found on another page of this issue.

Pursuant to the call of the Picnic Committee, efficiently headed by Lister Holmes, about thirty-five care-free architects, members of the Washington State Chapter, A. I. A., gathered at West Landing on July 15th, for their annual frolic. All the high-brows stayed home, so a jolly time was had by all.

MOTION PICTURE THEATRE DATA PART III

BY EMIL M. MLINAR.

In this serial article Mr. Mlinar, who is the New York associate of C. Howard Crane, Architect, Detroit, Michigan, is going thoroughly into the practical considerations in motion-picture theatre design, presenting the data indispensable in designing and making drawings for such theatres. Mr. Mlinar specializes in theatre work and was formerly of the office of Thomas W. Lamb.—Ed.

AN EFFECTIVELY designed mezzanine promenade is one of the most important features of a motion picture theatre, especially where large numbers of people must be handled. It is true that so spacious and impressive a mezzanine as that of the Capitol Theatre, in New York, is rarely possible, for in that theatre the balcony above is of such great depth that the rise provides space for an unusually large mezzanine extending all across the back of the auditorium and overlooking the grand foyer. The balcony of this theatre seats two thousand four hundred people. This mezzanine promenade is one hundred sixty feet long and about thirty-five feet wide from the wall to the balustrade along the open well at the back. The ceiling at its highest point is about fourteen feet. A photograph of this mezzanine is shown on page 15. The three doors

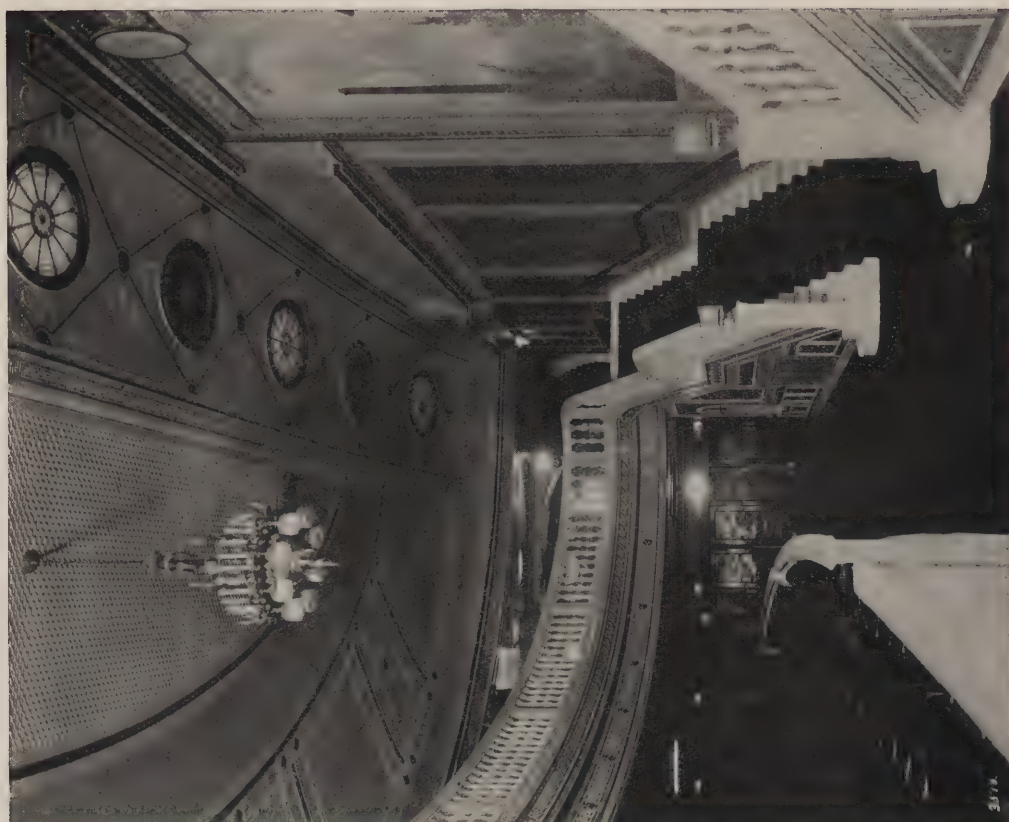
in the wall at the right of the picture open upon passages leading to the balcony. At either end are stairways to the balcony. The foot of one of these stairs may be seen at the extreme left of the photograph. At the far end is the main staircase leading from the grand foyer. At the end back of the camera are the ladies' retiring room and the men's smoking room.

The mezzanine of Loew's State Theatre, New York, is shown in the photograph on this page. This room has, as will be seen, an open well in the centre. Entrance is had from a passage at the far end of the room and the stairway at the left of the centre of the picture leads up to the balcony. This promenade is about forty-five feet wide and the depth of the mezzanine proper is about ninety feet. In this theatre the ceiling under the mezzanine is quite low and



Mezzanine of Loew's State Theatre, New York City. Thomas W. Lamb, Architect.

PENCIL POINTS



*Stairway to Mezzanine Gallery of Loew's State Theatre,
Cleveland, Ohio. Thomas W. Lamb, Architect.*



*Mezzanine Gallery of The Tivoli Theatre, Chicago.
C. W. & George L. Rapp, Architects.*

PENCIL POINTS



Mezzanine of The Capitol Theatre, New York City. Thomas W. Lamb, Architect.

the well in the centre of the mezzanine overcomes the tendency of this height to seem dwarfed.

In the Tivoli Theatre, Chicago, the mezzanine gallery, a view of which is shown on page 14, has a ceiling height of about sixty-five feet. The rear of a horse-shoe of boxes and of the balcony look out upon this mezzanine.

In Loew's State Theatre, Cleveland, the mezzanine is curved and is open over the back portion of the orchestra floor.

The adoption of these various schemes for the mezzanine was determined by the exigencies of the special problem in each case, a matter of planning which will be taken up in connection with a discussion of planning in a later issue.

I wish to call attention here to these different methods of treatment and to point out that when possible it is better to avoid an open well over the main floor of the auditorium because of the disturbance likely to be caused by people moving about and talking near this well in the mezzanine. The well at the back, like that in the Capitol Theatre, New York, has an advantage in this respect.

The amount of floor space and the amount of furniture in the mezzanine are determined in accordance with the policy of the management of the theatre in each case. With some classes of patronage it is not desirable to encourage lounging about, while for a higher class of patrons it is desirable to provide a mezzanine that has something the character of a spacious lounge.

It will be well, I believe, to say a few words in regard to the smaller rooms opening from the mez-

zanine. Among these is the ladies' retiring room (one being provided on the level of the orchestra floor also). This feature should consist of a series of three rooms opening one from the other. First the rest-room or "ladies' club" as it is sometimes called, in which there will be smoking; second, the dressing-room, or as one designer calls it, the "powder room"; third, the toilet containing the water closets and hand bowls. There should be one water closet to every three hundred women and one wash basin to every four water closets. The well-equipped dressing room has "vanity dressers," tables with mirrors, four dressers for three thousand two hundred seating capacity. Where it is not possible to provide a women's retiring room on the orchestra floor, additional space should be provided in the mezzanine for this purpose, rather than place a women's retiring room in the basement, as women in general dislike a basement room. I want to say here that the room must have outside ventilation. In some cases water closet stalls three feet wide have been provided but the conclusion has been reached that stalls not more than two and one-half feet wide are preferable.

A smoking room and toilet room for men may be provided on the mezzanine, but men as a rule, have no objection to a basement room. In the men's toilet room there should be one water closet to every four hundred men and one urinal to every three hundred men. One wash basin to every four water closets.

In every theatre there should be a room of seventy-two square feet in area for use as an emergency or

(Continued on page 32)

A VOCABULARY OF ATELIER FRENCH. PART VI

BY RAYMOND M. HOOD

This is the sixth installment of a vocabulary which Mr. Hood, Architecte Diplômé par le Gouvernement Français and Chairman of the Committee on Architecture of The Beaux-Arts Institute of Design, is preparing especially for this journal. It will be of special value to students in the ateliers in this country as well as to those who may later study at the Ecole des Beaux Arts in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier. As it is believed that an attempt to indicate the pronunciation would be futile, no such attempt is being made here; the pronunciation should be learned from someone who speaks French correctly.—ED.

N (Continued)

Noir: *adj.*; black; *noir d'ivoire*, ivory black; *noir de pêche*, peach black.
Nouveau: *adj.*; new; *n. m.*; a beginner in an atelier.
Nuance: *n. f.*; shade, tone.

O

Oeil: *n. m.*; eye; *faire l'oeil*, to wink at, to make eyes at; *oeil de grand'pere*, reducing glass.
Oeuvre: *n. f.*; work, task; *dans oeuvre*: *arch.*; inside dimensions; *hors d'oeuvre*: *arch.*, outside dimensions.
Office: *n. m.*; office, function; *also*, pantry.
Oiseau: *n. m.*; bird; *à vol d'oiseau*, bird's eye view.
Ombre: *n. f.*; shadow, shade; *ombre portée*, cast shadow.
Ordre: *n. m.*; order; *arch.*, the orders of architecture, as the Doric, etc.
Osé: *adj.*; audacious, nervy.

P

Paître: *v.*; to lead to pasture; *envoyer quelqu'un paître*, to dismiss a person without ceremony.
Paix: *n. f.*; peace; *fou-moi la paix*, *fiche-moi la paix*, be quiet, do not disturb me.
Palais: *n. m.*; place, a public or a semi-public building.
Pâle: *adj.*; pale, lacking in color, feeble.
Panier: *n. m.*; basket; *anse de panier*, a curve, elliptical in character, formed by arcs of circles.
Papier: *n. m.*; paper; *papier buvard* or *buvard*, blotting paper; *papier bulle*, a rough, yellowish drawing paper similar to detail paper.
Papilloter: *v.*; to lack quietness in effect, to jump, to be overdone in brilliancy.
Parterre: *n. m.*; flower garden; *also*, that part of a theatre or auditorium situated behind and at a slightly higher level than the orchestra stalls.
Parti: *n. m.*; scheme, idea, intention.
Pastel: *n. m.*; pastel.
Patelin: *n. m.*; country, locality.
Patine: *n. f.*; an oxidation that forms on old bronze; *also*, a tone enveloping and harmonizing the colors of a painting, drawing or an object.
Patois: *n. m.*; dialect.
Patron: *n. m.*; teacher, master.
Patte: *n. f.*; the foot of an animal; *slang*, hand; *avoir de la patte*, to be clever, dexterous.
Pavé: *n. m.*; pavement; *also*, street; *être sur le pavé*, to be homeless or without work.
Payer: *v.*; pay; *payer la tête*, make a fool of.
Peau: *n. f.*; skin; *la peau!*, nothing doing.
Pelouse: *n. f.*; lawn.
Pendre: *v.*; to suspend, to hang; *slang*, to do, to accomplish.

Pepin: *n. m.*; seed; *slang*, umbrella.
Perron: *n. m.*; an exterior staircase.
Piger: *v.*; *slang*, to regard, to admire, *also*, to take, to swipe.
Pinard: *n. m.*; *slang*, wine.
Pioupiou: *n. m.*; *slang*, a soldier.
Pipelette: *n. f.*; *slang*, the concierge, the porter.
Piquer: *v.*; to pierce a hole, *also*, to brighten up or make sparkle a drawing.
Plafond: *n. m.*; ceiling, usually flat.
Plafonner: *v.*; to put up on a ceiling.
Plaquer: *v.*; to apply one thing on another; *slang*, to quit, to abandon.
Plâtre: *n. m.*; plaster.
Pocher: *v.*; *arch.*, to fill in with black ink, as the walls of a plan.
Poché: *n. m.*; the walls of a plan blackened in; *fig.*, the study of a plan with reference to the walls and piers only.
Poêle: *n. f.*; stove.
Poilu: *adj.*; hairy; *n. m.*; *slang*, a rugged, courageous man, a soldier.
Poinçon: *n. m.*; the king post of a truss.
Point: *n. m.*; point.
Point d'appui: point of support.
Pointes seches: *n. f.*; *pl.*; dividers.
Poire: *n. f.*; fear; *slang*, an easy mark, a gullible person.
Poivrot: *n. m.*; *slang*, a drunkard.
Pompier: *n. m.*; a fireman; *adj.*; *slang*, commonplace, orthodox, old-stuff.
Poncer: *v.*; to transfer a drawing from one sheet to another, usually by rubbing; *encre à poncer*, a special ink used for making drawings which are to be transferred.
Poncif: *n. m.*; a drawing ready to be transferred.
Poncoir: *n. m.*; an agate instrument used in transferring drawings.
Popote: *n. f.*; *slang*, cooking; *also* commonplace, hum-drum.
Populo: *n. m.*; *slang*, the common people, the crowd.
Porte à faux: a part of a construction that is not directly carried by a support, as a cantilevered part.
Potager: *n. m.*; a vegetable or fruit garden.
Potin: *n. m.*; *slang*, a din, a racket.
Poule: *n. f.*; *slang*, a girl, a skirt.
Poupoule: *n. f.*; *slang*, a good-natured expression similar to *poule*.
Preau: *n. m.*; a covered playground, a prison court.
Prix: *n. m.*; price, prize.
Promener: *v.*; to lead, to walk; *envoyer promener*, to send about one's business, to put out.
Puer: *v.*; to stink, to be rotten.



DETAILS OF THE THEATRE OF BACCHUS, ATHENS.
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

The details from the Theatre of Bacchus shown in the plate reproduced on the other side of this sheet, from D'Espouy's "*Fragments D'Architecture Antique*" are admirable expressions of the Greek love for refinement and beauty and purity of line in every part of their buildings. This plate is also an interesting example of rendering.



CARTOON BY BARRY FAULKNER FOR ONE OF HIS MURAL DECORATIONS
IN THE EASTMAN SCHOOL OF MUSIC, ROCHESTER, N. Y.

McKIM, MEAD & WHITE, ARCHITECTS.

The cartoon for one of the group of mural panels by Barry Faulkner in the Eastman School of Music, at Rochester, N. Y., is an unusually interesting drawing. These decorations by Mr. Faulkner consist of four panels grouped at the right of the proscenium—those similarly placed at the left being by Ezra Winter. These decorations fit in between pilasters and vary in size from about 10 ft. 6 in. wide x 18 ft. high to 16 ft. wide x 27 ft. high. The coloring of these paintings is like that of old tapestries and the pilasters and walls, which are of the color of Travertine, harmonize well. The decorative scheme relieves the oppressive sense of being shut within walls by its suggestion of the out-of-doors and its symbolism calls to mind pleasantly the various stages of development in the history of the art of music.



PENCIL DRAWING BY BERNHARDT MULLER

The pencil drawing by Bernhardt Muller, which is reproduced on the other side of this sheet, is notable not only as an example of pencil technique but also as an expression of the inherent charm of the building, a charm of which a suggestion persists even though the walls are in a state of ruin. This drawing well shows Mr. Muller's skill in making pleasing compositions and the sensitiveness with which he is able to render the picturesque note in architecture.



Farm Group from Residence



Approach from Residence



Approach from Community Center

SKETCHES OF FARM GROUP

*Sketches by Birch Burdette Long
Landscape Engineer
New York*

SKETCHES BY BIRCH BURDETTE LONG OF DESIGN FOR A FARM GROUP.
CHARLES WELLFORD LEAVITT, LANDSCAPE ENGINEER.

Three delightful little pencil drawings by Birch Burdette Long are reproduced on the other side of this sheet. They are notable for the success with which the appearance of a group of buildings from different points of approach has been suggested by means of a few pencil strokes skilfully made. These drawings are also interesting because they are entirely different from the large, fully-rendered drawings of designs for important works of architecture for which Mr. Long is known.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE
OF DESIGN

CLASS B. PLAN PROBLEM. PART IX.

Studying by Means of Mosaic

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive.—Ed.

ARCHITECTURAL students are all more or less familiar with the term "mosaic" as applied to the garnishing of a plan, of making a telling and effective presentation of an idea or a parti in plan. Just why or how it should be used for this purpose is not so generally understood, but they know the value of a number of lines within a plan, representing a floor here, or a ceiling there, or the furniture in a room.

But before a problem has reached the presentation stage mosaic has a value in the study of a plan very similar to the use of "grays" in the study of elevations. This is its use in the study of a scheme, of the "circulations," and of the working of a plan to solve the conditions of the program. For this purpose, of course, the mosaic is "indicated," rather than drawn.

This is, in reality, composition, composing with whites and blacks, and various intermediate grays. In every case successful mosaic is successful because it helps to explain the big idea of the parti. Now, the final presentation can never be successful unless the "effect"—the composition of whites and blacks and

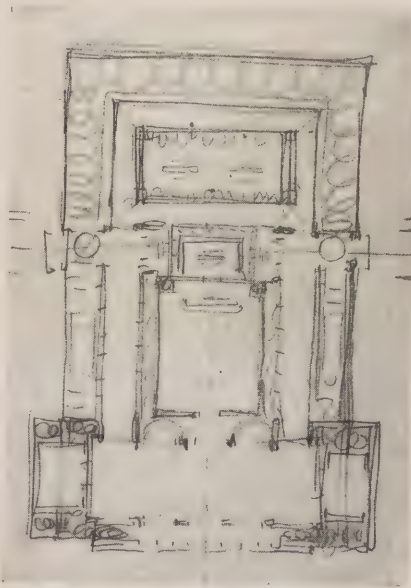


Figure 161. A Study of Plan.



Figure 160. An Elevation Study.

grays—is kept in mind from the early stages of the study, long before the presentation drawings are thought of. This is of equal importance with the study of "poché"—the study of the walls—for it should always be borne in mind in studying a plan, that one should consider the rooms, as enclosed by walls, rather than the walls. It is much easier to study effectively by masses of grays than by little points of poché!

Figure 160 is a typical study of elevation; here we see the balustrade, the band course, the window grilles, indicated by series of running spirals in pencil—usually smudged with the finger into a "gray"—to represent in a study of proportions, the position of ornament that will be later studied in detail and drawn, or in

some cases, perhaps, omitted if study shows them to be in the wrong place. To draw such details at such a stage in the study of elevation would be a foolish waste of time needed for other phases of study.

In the same way in Figure 161 we see an early study of a plan—a criticism by Paul Cret of a student's plan for a "Supreme Court Building." Here

PENCIL POINTS

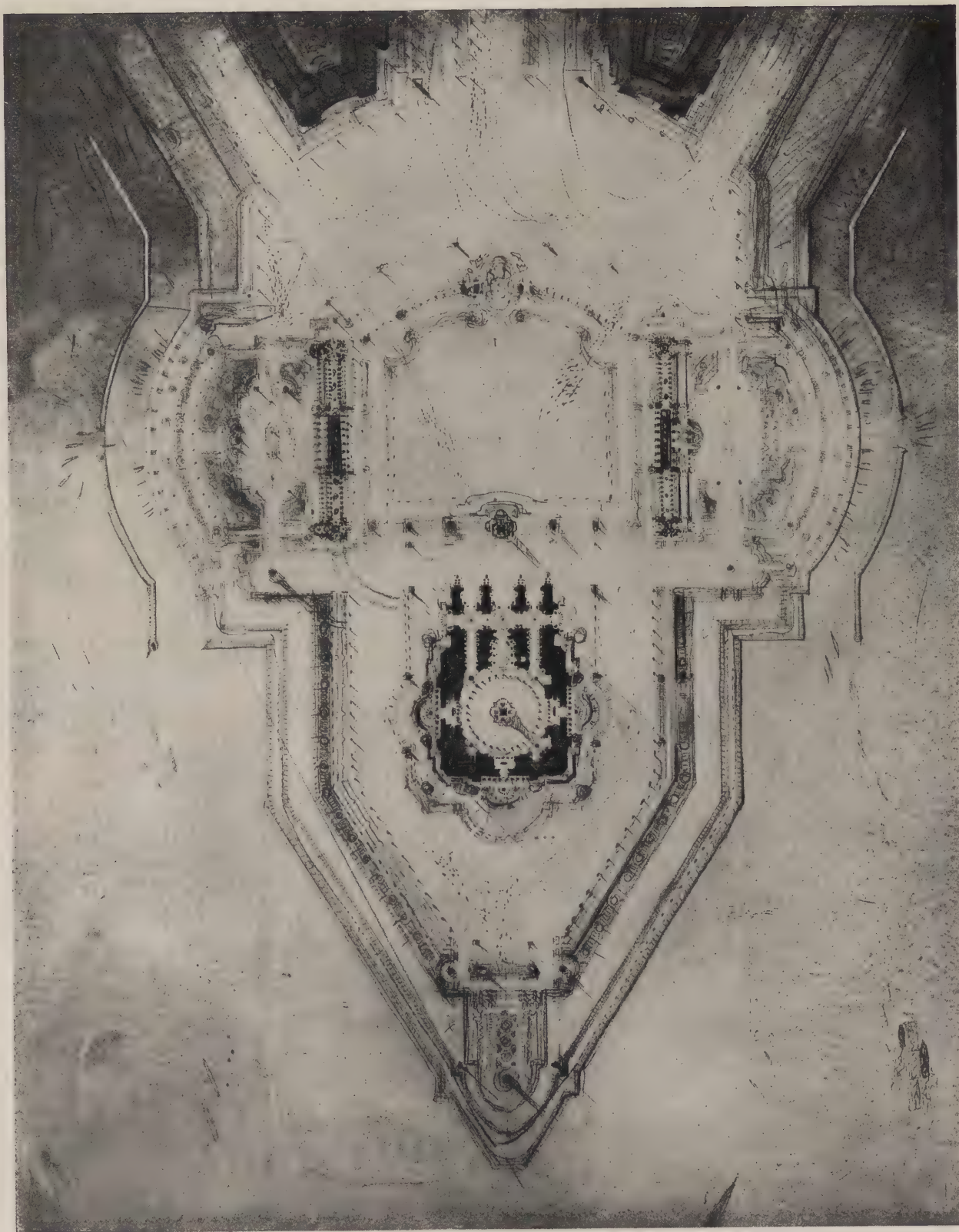


Figure 162. Plan Study by Grant Miles Simon for the Design With Which He Won the Paris Prize in 1913. Compare with Central Portion of His Final-Drawing on Opposite Page.
Subject "Treatment for Lower Part of Manhattan Island."

PENCIL POINTS

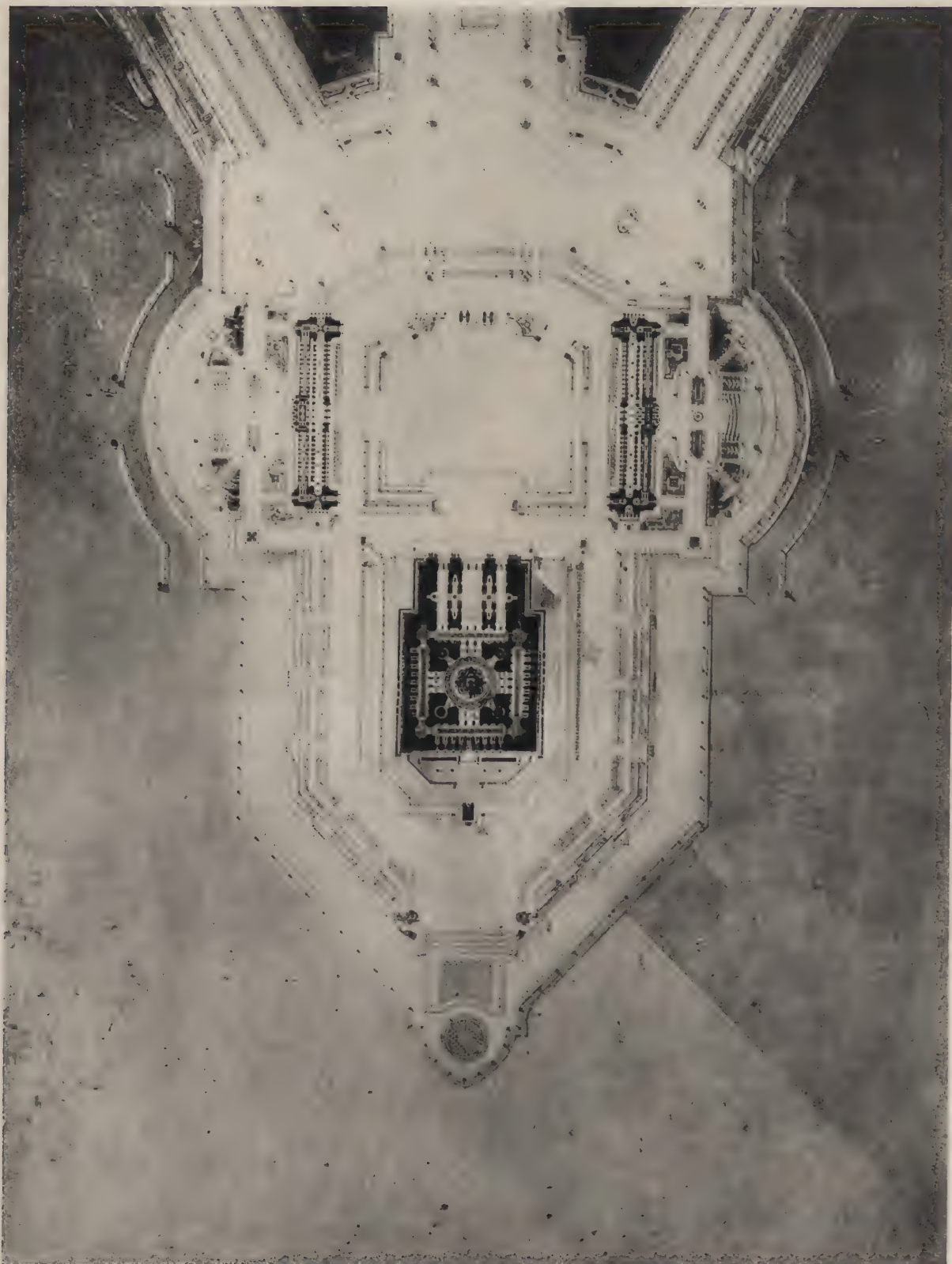


Figure 163. *Final Plan of Design by Grant Miles Simon, Winner of the Paris Prize of The Society of Beaux-Arts Architects in 1913. Compare with Rapid Study on the Opposite Page. Note Effectiveness of the Latter.*

PENCIL POINTS

the "circulations" are left white, the other portions grayed in various ways, none of which require careful drawing, but aiding in visualizing a scheme, so that the disposition of the different portions of a plan may more effectively be made.

In studies, such indication of mosaic should follow a use of T-square and triangle in laying out the big lines of the plan—the axes first, and the principal lines of the walls. Put these in place, and poché blacked in quickly with a brush or with pencil, the "effect" should be sought by indicating mosaic.

Note the effect obtained in Figure 162, one of the studies of plan made by Grant M. Simon in competition for the Paris Prize in 1913, which he won. Compare this sketch, a work of a few hours only, and done at a small scale, with the central portion of the final plan, shown in Figure 163, on which the actual drawing and presentation required nearly two weeks' time. The effect is almost as convincing in the sketch as in the final drawing. When this manner of study becomes a habit, and in the studies an attempt is made to approximate rapidly the final presentation, mistakes in plan, uncomfortable corners, unsatisfactory arrangements are made visible when they may be altered, while there is still time for study, and before the final paper is reached—avoiding the rubbing out and sponging out of mistakes that would not otherwise show

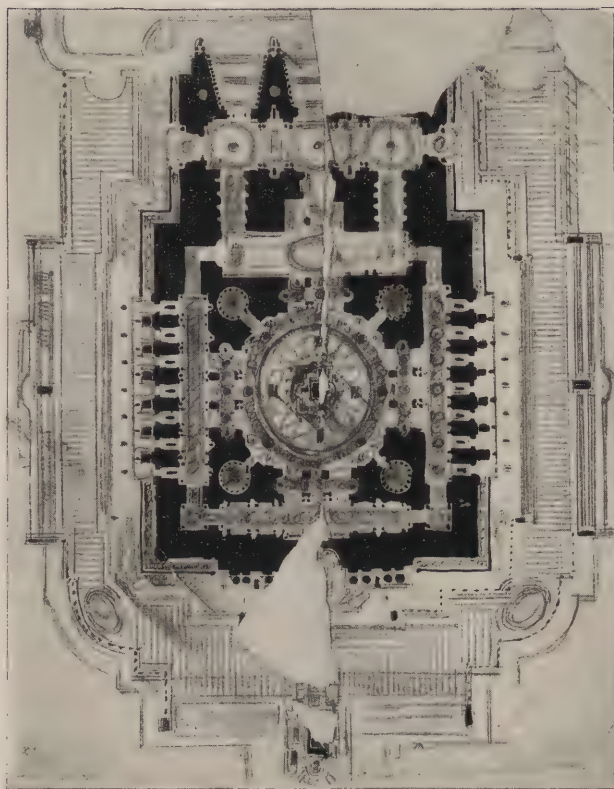


Figure 164.

petition in the Ecole des Beaux Arts, the way the mosaic is used in bands of gray to make a composition. This may also be seen in Figure 130 (February issue) in the plan by the same author submitted in a preliminary competition for the Prix de

Rome, and Figure 132 (same issue) by Delaon.

It is impossible to overestimate the value of this study of "effect." In small scale studies the mosaic may be indicated in pencil. In plans at large scale it is possible to arrive more quickly at an effect by using charcoal, or charcoal and chalk, especially in the study of the mosaic outside of the plan, or "entourage," as it is called, as we shall see a little later.

Now, as to the form of this mosaic indication: there (Contin. on p. 33)

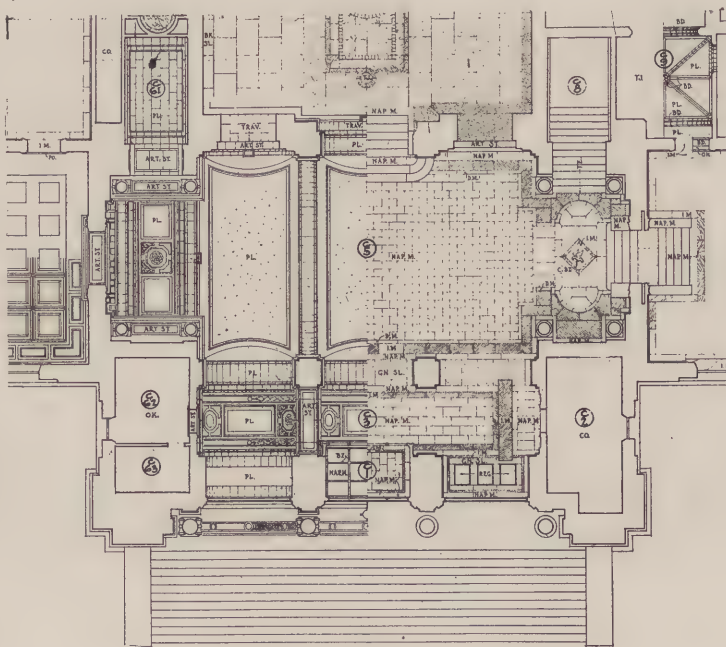


Figure 168.

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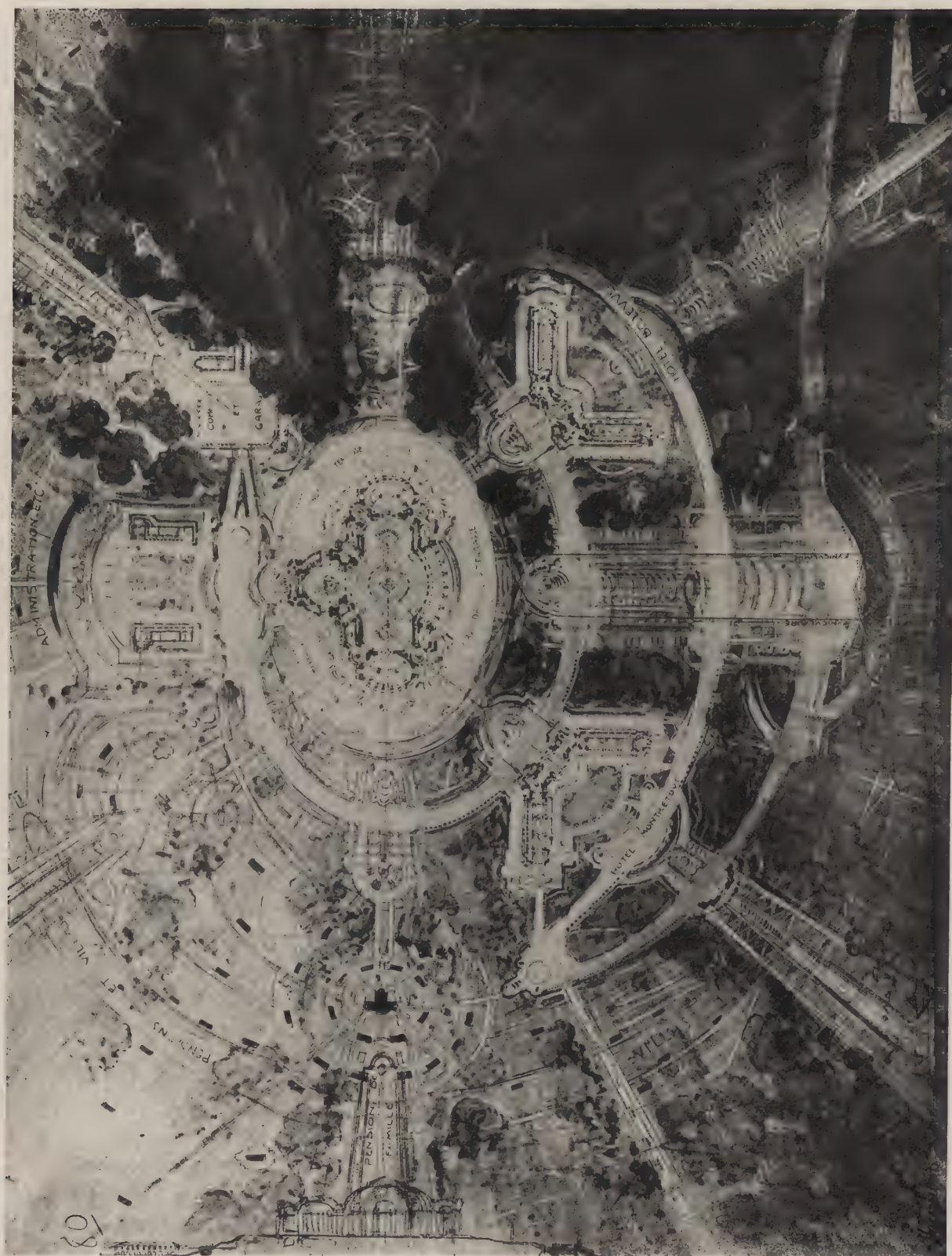


Figure 165. "Une Station Estivale," Concours Labarre, Ecole des Beaux Arts, Paris. Mention.
M. Roger Expert, Pupil of MM. Redon and Umbdenstock.

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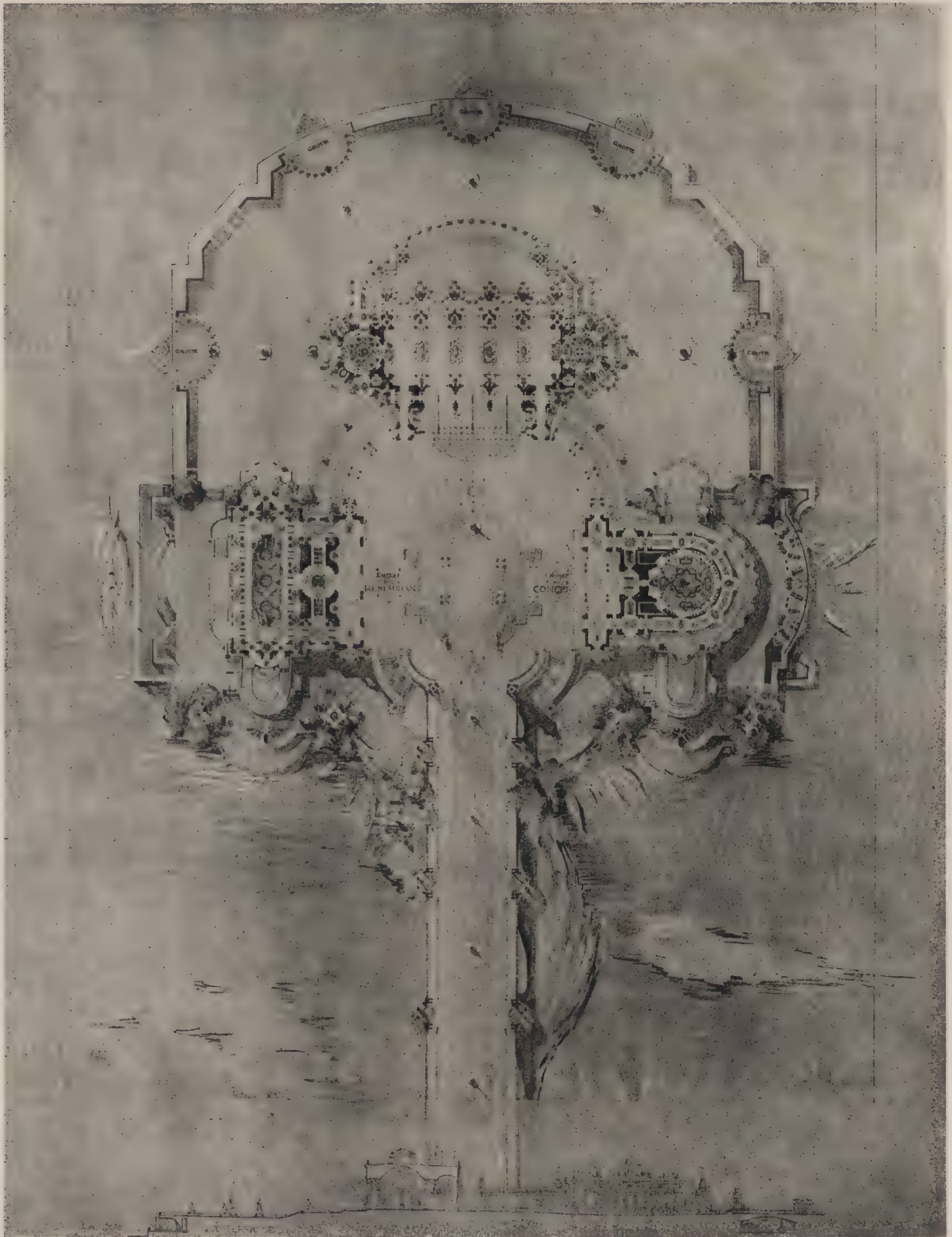


Figure 166. "Une Jettée-Promenade," Prize Design by M. Castel, Pupil of M. Bernier, Ecole des Beaux Arts, Paris, Concours Americains, 1912-13.

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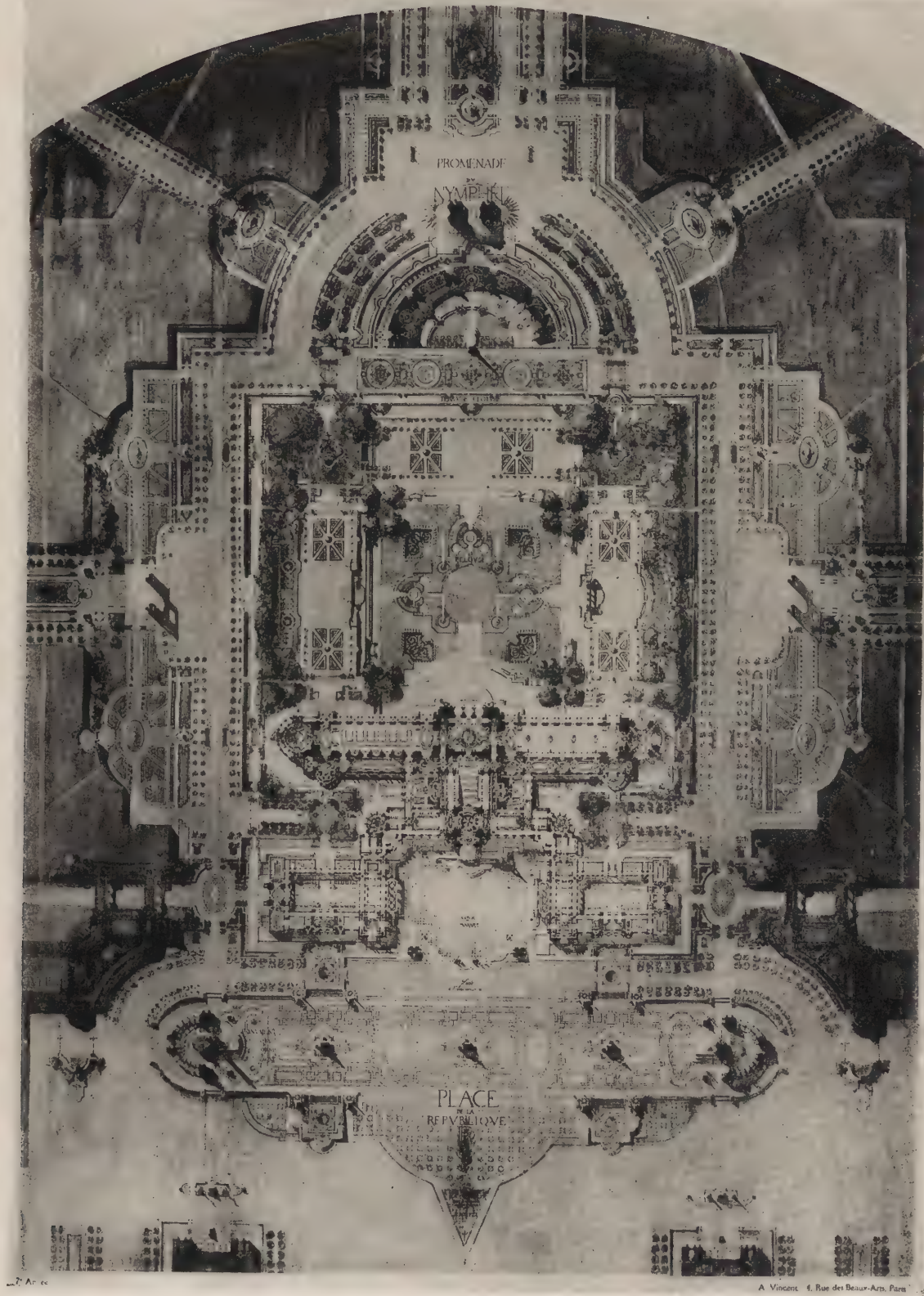


Figure 167. "Un Palais de la Presidence dans la Capitale d'une Grande Republique."
 Placed Second, Grand Prize, Ecole des Beaux Arts, Paris, 1912-13.
 M. Gaston Castel, Pupil of M. Bernier.

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THEY ARE COMING IN.

SKETCHES in considerable number have already been received at this office for entry in the Birch Burdette Long Sketch Competition for 1922. This year's competition, which closes at noon on October 30, promises to be an even bigger event than last year's competition. As was the case last year, prizes to the amount of two hundred fifty dollars are offered by Mr. Birch Burdette Long and the competition will be conducted by the publishers of PENCIL POINTS, with a jury of award including three distinguished architects. A public exhibition of sketches will be held in New York after the judgment and it is planned to send out a travelling exhibition again this year. Now is the time to come in. Read the announcement and full statement of conditions in the August issue of PENCIL POINTS or write to this office for conditions, then take a try at it.

RAYMOND J. RICHARDSON RECEIVES APPOINTMENT AT CARNEGIE INSTITUTE OF TECHNOLOGY.

RAYMOND J. RICHARDSON, of Reading, Pa., has been appointed Assistant Professor in the Department of Architecture at Carnegie Institute of Technology, Pittsburgh. His duties begin with the Fall Semester of 1922.

Mr. Richardson is a native Pennsylvania, and a graduate of the University of Pennsylvania, receiving his B. S. degree in Architecture in 1914, and his M. S. degree in 1915. The following year he was with J. E. R. Carpenter, and for another year was with McKim, Mead & White. He then entered the U. S. Navy and saw about eighteen months of service as Ensign with the Camouflage Division.

After the war, Mr. Richardson was associated for two years with Edward Z. Scholl, Architect, of Reading, Pa., and was then awarded the Henry Gillette Woodman Travelling Fellowship at the University of Pennsylvania. Since May, 1921, until July, 1922, he was abroad studying as holder of the fellowship.

MOTION PICTURE THEATRE DATA (Continued from page 15)

first-aid room. It should not be fitted to look like a hospital room. The walls should be painted a warm, pleasant color instead of white, and it should contain a comfortable couch or divan instead of a hospital cot. There should be a cabinet for supplies. This room is well placed on the mezzanine, as this gives it a central location.

There may well also be an office on the mezzanine for the manager, a room to which he can retire from his office on the orchestra floor and be undisturbed by the various types of people who insist upon seeing the manager without any good reason.

ADDRESSES WANTED.

THE publishers of PENCIL POINTS would like the present addresses of the following: Emmet, Ark.—Ira L. Brooks; Alhambra, Cal.—O. J. Brewer; Berkeley, Cal.—Rolf M. Eskil, Mary Jayne Gospodaric, Wallace H. Matlock; Los Angeles, Cal.—L. S. Alexander, R. W. Day, Edith Hynes, Geo. W. MacKenzie, Roy S. Price, C. J. C. Sharpe, Herbert Shaw; Santa Ana, Cal.—Florence Yoch; South Pasadena, Cal.—Lelia E. Mattox; Bridgeport, Conn.—Herbert Flanagan; New Haven, Conn.—D. M. Douglas; Atlanta, Ga.—J. B. Gill, Jr., T. D. Herin; Champaign, Ill.—K. O. Graves; Chicago, Ill.—Glenn W. Allen, R. J. McFarlane, Leone Morrow, Eric Peterson, Frank Sohn, Wm. J. Williams; Richmond, Ind.—Rudolph Brehm; South Bend, Ind.—F. N. Pedrotty, Myrle E. Smith; Monroe, La.—L. M. Lawrence; Cambridge, Mass.—L. C. Holden, Ira C. Johnson, Helen Jones, Henry C. Knight, O. J. Teegen, R. H. Walker; Ann Arbor, Mich.—J. P. Leach; Detroit, Mich.—Lester Manning; Minneapolis, Minn.—Carroll A. Armstrong, L. R. Cleveland, Alberta Eberhart, J. A. Kallander, R. A. McGee, Arthur Wade; St. Paul, Minn.—R. N. Hazlewood, Edw. F. Riley, Ralph W. Williquett; St. Louis, Mo.—E. A. Stuck; Bloomfield, N. J.—Leon H. Hoag; East Orange, N. J.—Mrs. R. M. Sutphen; Hillside, N. J.—W. P. Aquin; W. Montclair, N. J.—Lucius Moore; Newark, N. J.—Harry Tepperman; Passaic, N. J.—John P. Kelly; New York City—C. L. Douglas, P. H. Dumar, Louis Hertzberg, M. T. Ketz, Hendrick Maas, Arthur C. Nash, Jos. J. Reubel, Tom H. Stevens; Brooklyn, N. Y.—C. J. Callahan, Stuart Paterson, S. Tantorski; Jamestown, N. Y.—Carl Gylfe; New Rochelle, N. Y.—N. A. Noreloue; Syracuse, N. Y.—Martha Dittmar, John Wassum; West New Brighton, S. I., N. Y.—W. M. Robbins; White Plains, N. Y.—E. Hasbrouck; High Point, N. C.—E. D. Everhart; Raleigh, N. C.—R. W. Underwood; Alliance, Ohio—Chas. W. Maple; Cincinnati, Ohio—W. Harry Phillips; Columbus, Ohio—R. A. Bohling, Downie W. Moore, H. Schoen, H. A. Wieland; E. Cleveland, Ohio—Wilbur G. Hyde; Philadelphia, Pa.—St. Brian Baylinson, A. D. Carroll; Pittsburgh, Pa.—M. G. Uslan; Scranton, Pa.—John G. Gilson; Clemson College, S. C.—H. L. Johnson; Huron, S. D.—J. H. Albright; Wapakala, S. D.—H. A. Miller; College Station, Texas—T. H. Baker, L. P. Newman, T. G. Ratcliffe; Fort Worth, Texas—H. A. Spackler; Charlottesville, Va.—G. H. Fohworth, J. H. Law, J. W. Martin; University, Va.—Edwin McElroy; Auburn, Wash.—E. J. Schubert; Seattle, Wash.—Victoria G. Edades, Edw. Leonard; Manitowac, Wis.—Arthur C. Dietrich; Milwaukee, Wis.—W. B. Sunley, Robert Trumpfheller; Montreal, Canada—Jos. A. L. Houle, W. Roy Wilson; Toronto, Canada—G. A. Reynolds, Henry F. Starbuck; London, England—F. B. Kemp.

PERSONALS.

LINGLE DOUGLAS LANCE has removed his office for the practice of architecture from Wyomissing, Pa., to 108 North Fifth St., Reading, Pa.

THE ASSOCIATED ENGINEERS, INC., have removed their offices from 86 Michigan Street to 373 Broadway, Milwaukee, Wis.

HARVEY W. CORBETT, of the firm of Helmle & Corbett, is returning from his six-weeks' trip to London and will arrive in New York about September 1.

JOHN TEMPEST WALKER, as an associated partner in the company, will in the future direct the architectural activities of Samuel H. Pitcher Company, Inc., civil engineers and architects, 44 Front Street, Worcester, Mass.

NORRIS I. CRANDALL, assistant professor of Architectural Design of the University of Illinois, has resigned to become head of the Department of Architecture at the University of Porto Rico.

WILLIAM MACY STANTON and STANLEY P. STEWART of the Department of Architecture of the University of Illinois, have resigned to enter the practice of architecture in Philadelphia. Both men are licensed architects in Illinois, Pennsylvania and New Jersey.

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THE STUDY OF ARCHITECTURAL DESIGN

(Continued from page 28)

should be a big scheme underlying it, to explain the parti. In some cases the "circulations"—corridors, lobbies, etc., are left white, and the various rooms grayed in, as in Figure 161. Of course, this will also be true of the finished drawing, as may be seen in Figure 166 by Castel, one of the masters of mosaic indication among the recent students at the Ecole des Beaux Arts at Paris. In a finished drawing of course, "whites" are only white by contrast with the darker bands, and themselves may have a considerable amount of drawing, as in parts of this plan. This scheme may also be seen in the plan of Hébrard, Figure 128 (February issue.) Or the scheme may be reversed, and the circulations heavily mosaiced, as in the reception portion of the plan for a presidential mansion shown in Figure 167, also by Castel. The important thing to remember is that the mosaic must, with the poché and rendering, form a composition.

Within this composition it is customary to indicate which are the important rooms by the richness of the mosaic—for mosaic may be rich in color and drawing whether it is to count as a light or a dark, by the character of the drawing and the contrasts between the light and dark bands. Note the almost jewel-like appearance of the center of the monument in the Simon Paris Prize plan, and in various portions of the two plans by Castel, Figures 166 and 167.

While these are all very rich in lines, and the mosaic is small in scale—and student work in general should be so—it is the custom in competitions for actual work, and in studies in offices for projected work to use a much simpler form of mosaic, limiting it to that which really is to occur in the building—simple floor patterns, or ceiling diagrams, but even here, though the lines are simple, they must in the same way be composed; i. e., they are part of the architecture, which, of course, is "composed." In this connection it is interesting to study Figure 168, a reproduction of a portion of a contract drawing for the new Museum of Art in Detroit.

In the next installment, we shall consider the actual drawing of mosaic.

PLYM FELLOWSHIP WON BY FLOYD W. RAY.

THE ninth competition for the Plym Fellowship in Architecture of the University of Illinois has been won by Floyd W. Ray, of Long Beach, California. The Plym is a travelling fellowship and provides for a year's study abroad. It was established some ten years ago by Mr. Francis W. Plym, a graduate of the Department of Architecture of the University of Illinois, and president of the Kawneer Manufacturing Company of Niles, Michigan. The present holder, Ernest Pickering of Lawrence, Kansas, returns from his studies as Mr. Ray departs. Mr. Ray is a graduate of the University of Illinois in the class of 1921, and the winner of the Institute Medal for that year. He is at present a designer in the office of T. Beverly Keim, Architect, Los Angeles. He sails in September.

THE TECHNOLOGY CLUB OF SYRACUSE.

THE affiliation plan recently adopted to bring into full membership all local chapters or sections of national engineering bodies so that the educational purpose of the club can function as a unit in engineering has added several hundred highly qualified engineers in Syracuse and throughout central New York to the annual membership which has averaged two hundred since the incorporation of the club nineteen years ago. Through a wise broadening of the membership requirements and the reduction of annual dues to five dollars, many scores of men not identified with the national bodies have joined.

Club rooms are maintained in the Eckel Theatre Building. Lectures are given at the Onondaga, either in the roof garden, the Hiawatha Room, or the ball room. The lecture program is varied and the lectures are by men chosen especially for their fitness to speak on their respective subjects. There are usually three lectures a month.



CLEMENS NICHOLAS.

CLEMENS NICHOLAS, president of the national organization of Scarab architectural fraternity, was born in St. Louis and is a graduate of Washington University of that city. In his college days he was the winner of the A. I. A. medal and later taught in the public schools. He was for a summer the instructor of the St. Louis Architectural Club Summer Sketch Class. While in college he was elected to the Scarab Architectural Fraternity. He is a member of the staff of Jamieson & Spearl, St. Louis. His early training was with such architects as Warren, Russell & Crowel, St. Louis, and Link & Trueblood, Jackson, Miss.

The Scarab Fraternity of which Mr. Nicholas is president was founded at the University of St. Louis in 1909 for the purpose of fostering good fellowship, developing a professional spirit and stimulating friendly and personal co-operation among architectural students. Temples of this organization are now to be found in such schools of architecture as the University of Illinois; Washington University, St. Louis; Armour Institute; Pennsylvania State College; Carnegie Institute; Massachusetts Institute of Technology and Kansas University. With representation in such schools as these and with so able a leader as Mr. Nicholas, Scarab may well be expected to greatly strengthen and broaden its influence for good in the architectural profession.

PRIZES FOR SLOGAN OR INSIGNIA.

A PRIZE of one hundred dollars is offered for the best slogan to promote the use of slate and another prize of one hundred dollars for the best design for a slate industry insignia. One competitor may win both prizes.

A national association of the slate industry is being created to inform the public of the superior service rendered by slate. An objective tersely expressed by a slogan is desired, also an insignia. They are to be used on the advertising and literature of the association and on the stationery of members. Contest closes September 30, 1922. Announcement of this competition and statement of conditions appear on another page of this issue. Booklet "Uses of Slate" will be sent on request addressed to Slate Slogan or Insignia Contest, 757 Drexel Building, Philadelphia, Pa.

QUERIES

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, Metropolitan Tower, New York City.

Question—Will you kindly let me know of a good book or two on architectural ornament for decorating friezes and other such surfaces, also a book on Colonial furniture? S. K. *Answer*—We would suggest the following books: Meyer's "Handbook of Ornament"; Speltz's "Styles of Ornament." The first is general and the latter is more architectural. For friezes and panels see "Le Stucco" by Terrarri. For Colonial furniture we recommend the book by Lockwood, published by Charles Scribner's Sons, New York; Nye's "Measured Drawings of Colonial Furniture," published by William Helburn, New York; Nutting's "Furniture of the Pilgrim Century," published by Charles Scribner's Sons, New York.

Question—Please suggest some books that would be of value to a young man soon to enter architectural school. R. M. M. *Answer*—Lubsch's "Over the Drawing Board," "Vignola" by Esquie with English translation, or "The American Vignola," "Essentials of Composition" by J. V. VanPelt, published by the Macmillan Company, New York.

Question—Will you kindly inform me as to where I can secure information on the Parthenon, regarding the dimensions, points of the compass, total height, column heights, etc.? P. H. C. *Answer*—We would refer you to Penrose's "Investigations into the Principles of Athenian Architecture," also to Stuart & Revett's work and to D'Espouy's "Monuments Historiques." We believe that Stevens is preparing a work that is intended to be the most complete and accurate book on the Parthenon, but this work is not finished. It is being done under the auspices of the American School of Classical Studies, at Athens.

THE AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following: "We are beginning to scatter for the year. We have had our last meetings of the Academic Council and the Library Committee. Prof. Lamond and Composer Sowerby have left and Composer Hanson follows in a day or two; their program is far from a restful one, as they are planning to attend all the important musical festivals in Austria, Germany, Holland and England. Mr. Lamond goes with the Fellows so that he may introduce them to important composers and conductors. The festivals they are to attend are at Vienna, Munich, Salzburg, Cologne, Bohn, Amsterdam, Gloucester, London and Leeds. Professors Van Buren and Curtis have left for America. Professor Whicher and McCrea are at Cortina d' Ampezzo in the Tyrol. Professor Fairbanks, Mr. Davico and myself are holding the fort in Rome.

"Just before Composer Sowerby left, I had the great pleasure of listening to a suite of four pieces composed by him for the piano. They were delightful interpretations of impressions he had gathered while camping last summer in the woods on Lake Superior. And his touch on the piano is extremely good. He has already formed quite a circle of admiring friends among the younger Italian composers.

"Mr. Blashfield has been in town. He intended to stay two weeks, but, as he was invited to motor to Florence

through the hill towns, he was here only a few days. He saw all the studios and the department of music, and he lunched with all the staff and students. He and I also had time to call upon the painter, Mr. Vedder. He took up with Painter Lascari the question of mosaics for your St. Matthew's Church in Washington. They were to have spent to-day at Ravenna studying the mosaics, and to-morrow they are due in Venice to confer with the glass contractor. You have given them a pretty big job—about 1,700 square feet of surface to cover with glass mosaic. They are both wondering how many years it will take!

"Mr. George F. Baker, Sr., dropped in upon us one afternoon without any previous warning. We did not know that he was in town and he was leaving at eight o'clock on the following morning. Professors Fairbanks, Lamond and McCrea were on hand. Mr. Baker seemed to be pleased with what he found for he wrote me from Florence stating that he would like to buy one of Sculptor Jones' productions.

"Mr. Robert W. DeForest's daughter, Mrs. Stewart, likewise made us a call, going through the studios, living rooms and library.

"It will interest the trustees who are landscape architects to learn that there is a party of eleven landscape architects in Rome at present. The party was organized by one of the chapters of the American Society of Landscape Architects. We have been able to help them in planning out their tour and in making arrangements at hotels and in obtaining permission to visit villas. Each member of the party has a particular job to fulfill when they visit villas; I was amused to learn that one man had the job of "scale." As you know, scale, is a pretty elusive animal!

"Almost every month I have a paragraph in these news letters on gifts. For last month I can report the donation of 30,000 lire from Mr. Myron Taylor (Mr. Norton's friend) for the purchase of pianos for the department of music. Mr. John William Mitchell, president of the Art Commission for the city of Los Angeles, said he would like to contribute \$1,000 toward the endowment of the academy and he also offered to help Senator Phelan collect money in California next fall for the endowment. Professor Wicher has contributed \$30 to pay for half the expenses incurred by Landscape Architect Griswold in connection with the latter's excellent plaster model of the casino at Villa Caprarola. And, finally, Mr. Alfred E. Hamill of Chicago has given us 300 lire for the purchase of art books.

"The Banca Italiana di Sconto is preparing to make its first payment this month—10 per cent. of the deposits.

"This is the season of repairs to the various properties. They are best made in the summer, when there are few persons in residence. There is comparatively little work to be done this year I am glad to report.

"I have obtained estimates upon the McKim-Morgan Memorials. The cost will be about \$3,000 for each memorial.

"I am trying to obtain a reduction in fares for our students both on the Italian railroads and upon the Italian steamship lines. I have succeeded in obtaining a 50 per

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cent. reduction on the railroads provided there be a party of ten or more and I have hopes of having this reduction granted to individual travellers.

"The British School at Rome and the French Academy in Rome have both held exhibitions of the work done by their Fellows. That at the French Academy was unusually good, due perhaps to the fact that they have had a greater number of Fellows than ever before on account of war conditions—twenty-five Fellows in all. The paintings they exhibited were really remarkable. It is still my hope, to have some day a common exhibition of all the academies, but we must wait until the finances of some of the countries involved have improved—we will probably have to wait years. There is nothing like friendly rivalry among young, ambitious men—at least in my judgment."

PRIZES FOR PAPERS ON VITRIFIED CLAY PIPE.

PRELIMINARY announcement of cash prizes for the best paper entitled "Use of Vitrified Clay Pipe in Plumbing Systems" is made by S. E. Dibble, Head of the Heating and Ventilating Department of the College of Industries, at Carnegie Institute of Technology. The total amount of prizes is four hundred (\$400.00) dollars. The contest will be open to all practical plumbing and heating dealers, inspectors, etc., as well as to instructors and students in all institutions where drainage is taught.

Detail announcements of the rules and regulations of the competition, and the amount of each prize in the various classes, will be made about September 1st, 1922.

This contest is a move toward increasing building operations, having in view, particularly, the reduced cost of drainage work. It is advisable that competitors for these prizes obtain copies of Mr. Dibble's printed report of recent experiments on the use of bituminous jointing compounds for Vitrified Clay Pipe. The experiments were conducted at Carnegie Institute of Technology. Copies of the report will be sent upon request by addressing R. S. Clark, Office of the Secretary, Carnegie Institute of Technology, Pittsburgh, Penn.

PHILADELPHIA BUILDING CONGRESS.

AT A meeting in Philadelphia of the Construction Conference Group which has, for two years past, been functioning informally along lines conforming to the activities of the National Federation of the Construction Industries and latterly of the New York Building Congress, the Group formally completed the organization of the Philadelphia Building Congress in the Hotel Longacre on August 17th, 1922.

The principal matters transacted at the meeting included the adoption of a constitution and by-laws, the creation of several committees with highly important functions and the election of officers pro tem.

The Philadelphia Building Congress was created "with the desire to place the Construction Industry on a high plane of integrity and efficiency and to correlate all efforts towards betterment now being made by existing organizations."

This meeting and the previous one, held August 10th, were practically representative of all the following groups which comprise the twelve component parts of the building and construction industry, and conform to the same groups as classified in the new American Construction Council, namely: Architects, Engineers, General Contractors, Sub-contractors, Construction labor, Material and equipment manufacturers, Material and equipment dealers, Financial, surety, accounting, insurance, building and loan and real estate organizations, Chambers of Commerce and Boards of Trade, Public utility construction departments, representatives of Federal, State, County and Municipal bureaus or departments concerned with construction, Associations of builders exchanges and building trades employers, and the Public.

Officers were elected as follows: President, D. Knickerbacker Boyd; Vice-Presidents, James W. Pearce, Edwin L. Seabrook, Harry C. Woods; Secretary, H. J. Baringer; Treasurer, Herbert L. Towle; and at the next meeting additional members of the Executive Committee will be elected and committees authorized by the By-laws will be

appointed, as follows: Committee on Vocational Guidance and Apprenticeship, Committee on Seasonal Unemployment, and a Committee on Co-ordinating New Construction with Maintenance Work. Other standing committees to be appointed at the next meeting include: Committee on Codes and Committee on Public Information. A special Committee on Sesqui-Centennial Construction Matters was authorized.

ROGER BAILEY WINS PARIS PRIZE.

ROGER BAILEY has been awarded the Paris Prize of the Society of Beaux-Arts Architects as a result of the competition just closed at the headquarters of the Beaux-Arts Institute of Design in New York.

Mr. Bailey's home is in Rochester, N. Y. He graduated from Cornell University in 1919 and has been employed in the offices of John Russell Pope and of A. L. Harmon in New York. Mr. Bailey worked under Patron E. V. Meeks of the School of Fine Arts, of Yale University.

The program called for a City Hall which had the requirements never before demanded in practice. Realizing that important cities in the country were now called upon to receive in a dignified manner frequent visitors of distinction, even Kings and Queens, the program demanded either a separate building or that a distinct portion of the large building be given to great suites of reception rooms and that the administration should be housed in close connection with this. The plot was 400 x 800 between important avenues and half of this space was to be kept free to give a setting to the buildings and place for large crowds to congregate at the times when distinguished visitors were received by the municipality.

The other men in the final competition were: E. W. Burkhardt of Columbia University, N. Y.; Louis Fentnor, who worked under Patron F. C. Hiron; J. G. Schuhmann, Jr., of Columbia University, and E. L. Babitsky, graduate of John Huntington Polytechnic Institute, Cleveland, Ohio, who worked under Patron John Wynkoop of New York.

The jury of award was composed of the following members: Henry O. Milliken, Chairman; James Gamble Rogers; Joseph H. Hunt; John M. Howells; Louis Ayres; F. L. Ackerman; H. R. Sedgwick; Robert Bellows, and Paul Cret.



Roger Bailey

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION PART VI.

BY OTTO GAERTNER.

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Squash Court Construction Continued.—In the centre of the rear wall, opposite the play wall having the tell-tale, is a door through which one enters the court. If the adjoining space does not permit the door to be placed in the centre it may be placed to one side. It is generally made two feet and six inches or two feet and eight inches wide, and six feet and six inches or six feet and eight inches high, the larger dimensions being used for wood lined courts and the smaller ones for cement courts. In the wood courts the door generally sets at the floor but in the cement courts it is raised six inches above the floor. The door is provided with a heavy polished plate glass peep hole about three to six inches square, set about five feet above the bottom of the door. It must be at a convenient level for the eye when one stands on the court floor as well as when one stands on the six inch higher level of the raised door sill which is often the level of the adjoining floor space outside the court. The door must set flush with the face of the court wall and not have any projecting hardware. For this reason it is set with a pivot at the top and a suitable pivoting floor check at the bottom. The construction of the court side of the door must be of the same construction as the walls of the court, the other side being made to match the surrounding trim. The door is hung to swing into the space adjacent to the court, not into the court. With the wood court the door and frame do not present so difficult a problem as with the cement court. The wood door is of the same heavy construction as the walls, and bolts having a diameter of one quarter of an inch and about twenty-four inches apart are run through the door its full width to re-inforce it. In the cement court, the door must be finished on the court side with cement applied on a rigid, enduring, and non-shrinking and non-expanding back ground, capable of withstanding the harder usage to which this heavier door is naturally subjected. Also there must be a suitable stop for the cement wall finish. This stop is formed by the door frame which is usually made from an iron channel weighing eleven and one quarter pounds per foot in length, and having flanges two and one quarter inches wide. The iron channel is used for the head, jambs, and sill of the door frame, the flanges being turned outward so that the edge of one flange forms the stop for the plaster of the wall. Iron strap anchors fastened to the back of the frame anchor it to the wall. No door stop is placed on the sill of the door frame, but a metal stop one half of an inch thick and seven eighths of an inch wide is placed on the head of the frame flush with the court wall face, and has its one half inch face away from the court slightly beveled making it slightly wider against the frame. A stop of the same size is similarly placed on the jamb opposite the one at which the door is hung. This stop, however, should be slightly beveled on the seven eighths of an inch wide face making the edge of the stop away from the court slightly less than one half of an inch wide. This is done so that the door will swing shut with a very close joint. In addition to these, a stop is placed on the other jamb of such a size as may be necessary to suit the particular size and make of pivot and floor check to be used. A check similar to the Rixon check number twenty-five is the type generally used. It may be necessary to make the stop on this jamb one quarter of an inch less than the thickness of the door, which is made of frame angle irons covered with a steel plate three sixteenths of an inch thick. The stop can be one half of an inch thick and the plate of the door can overlap it to make a tight joint. Of course, where the seven-eighths of an inch wide stop occurs at the head, a similar one to meet it must be placed on the edge of the door. The same

thing applies where the seven-eighths of an inch wide stop occurs on the jamb, but in this case the one on the door need not be beveled like the one on the jamb. The plate of the door extends over the edges of the stops forming the rabbets on the door, and makes a tight joint at the channel iron frame.

The angle iron frame of the door is made of angles having legs one and three quarters of an inch long and one quarter of an inch thick. From the foregoing statements it may be seen that these angles are set with one leg forming the edges of the door to receive the stops, and the other parallel to the court wall but away from it to receive the plate forming the back of the door. The edge of the one leg of the angle facing the court must be milled so that it has a perfectly square face since it forms the stop for the plaster finish on the court side of the door. The same thing applies to the angles of the same size that are used to form the frame for the glass of the peep hole. The plaster finish is placed on a rich concrete of fine aggregate, well compacted, that is placed within the angle frame of the door. Before the concrete is put in place, rods that are one quarter of an inch in diameter must be placed about six inches apart in both directions inside the angle iron frame of the door to reinforce the concrete and to hold it against the steel plate forming the side of the door away from the court. The ends of the rods extend through the angle iron frame about three quarters of an inch from the face of the plaster and are fastened like rivets countersunk flush with the outside of the frame so as not to show, and to permit making close joints against the channel iron door frame.

In addition to the stops already mentioned, stops are also needed to hold the glass of the peep hole in its frame. For this purpose, angles with legs one half of an inch wide are fastened to the frame of one and three quarter inch wide angles in such a way as to be flush with the plaster face of the door. The plate glass, which is one-half or preferably seven-eighths of an inch thick, is then rabbetted into these angle stops so as to be flush with the plaster face of the door also. On the side of the glass away from the court, metal stops about one half of an inch thick and three quarters of an inch wide are put against it to hold it in place, these stops being removable to permit replacing the glass. All screws and rivets must be countersunk so as not to show on the edges or face of the door. Advantage may be taken of the so-called non-breakable glass now on the market. It consists of several layers of glass cemented together with an invisible cement. If the thickness of the layer toward the court is made the same thickness as the leg of the angle stop, the rabbet can easily be formed by making the dimensions of that layer less all around than the remaining layers, according to the width of the rabbet required. Also, a thinner glass may be used.

The door must be provided with a lock having a flush handle on the court side. By a flush handle we do not mean the countersunk handle commonly used on a horse stall door, but one which will insure an absolutely flush surface, so that the play of the ball when it strikes the handle will be the same as on the remainder of the wall. In order to be able to take hold of the handle to turn the latch and open the door, one must press the handle at a certain place to make it spring out sufficiently to be taken hold of. It will be noticed that if there are four vertical reinforcement rods placed into the door at equal distances from each other making five spaces, and if there are eleven horizontal rods similarly spaced, the peep hole will occur in the centre of the door and in the fourth space down from the top. Also, the lock will occur in the fifth space from the bottom, or at a distance of about three feet from the court floor to the centre of the lock.

The ceiling heights of the courts are not definitely fixed, but since the play walls are fourteen and sixteen feet high as already mentioned, the clear unobstructed heights should not be less. There need not necessarily be a flat plastered ceiling over a court, as for instance, if the court is free standing, on a roof, or on an upper floor, there may be exposed roof trusses or a skylight. If artificial lighting is used, the projection of the fixtures below the ceiling must be considered and the ceiling height established accordingly. The lighting should be indirect and well diffused so that there will be no shadows to confuse the

players. A good method is to place eight units on the ceiling, which is painted a light color, hanging the fixtures about eighteen inches below it. The conditions in each individual case must govern the method to be used, as well as the type of fixture and the number of watts to be used in each. The fixtures must be protected against the balls by heavy wire mesh on top and if necessary on the under side also. When sufficiently heavy metal bowls are used, the protective wire underneath may be omitted. If a skylight occurs in the ceiling, a large amount of reflected light will be lost and it may be necessary to use a fixture with a reflector over the bowl.

The court is usually provided with a hipped skylight over the greater part of it, and it generally extends to within about two feet of the four walls. If such a skylight is used, the roof construction must be of steel to support it and the remainder of the roof may be of any desirable construction. But the necessary skylight curb, flashings, and roof covering must also be provided, the owner's pocketbook dictating the quality to be adopted. Any substantial weather tight type of skylight is acceptable, but the glass should be at least five-sixteenths of an inch thick, translucent, ribbed or possibly ground on the under side, and preferably wired.

(To Be Continued)

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Catalog of Drawing Materials—Complete catalog of instruments, papers, cloth, furniture, and drafting-room supplies. 6 x 9 in. 384 pp. New York Blue Print Paper Co., 98 Read St., New York.

Soss Invisible Hinges—Booklet showing details and specification data. Hinges for furniture, cabinets and general use in buildings. 24 pp. Soss Mfg. Co., Grand Ave. & Bergen St., Brooklyn, N. Y.

Lupton Steel Windows—Illustrated specifications brochure, No. 110. Windows for apartments, residences, schools, industrial plants, etc. Working drawings. 8½ x 11 in. 72 pp. David Lupton's Sons Co., Allegheny Ave. & Tulip St., Philadelphia, Pa.

Steam Heating Engineering Manual—Covering the subject of heating very thoroughly. See review in August issue. 367 pp. 8½ x 10½ in. Price \$3.25 per copy postpaid. Warren Webster & Co., Camden, N. J.

Brascolite Bulletin No. 9—Booklet illustrated in color, showing types of units for various uses. Tables, prices, chart for calculating illumination required. 8 x 10½ in. 30 pp. Brascolite Co., St. Louis, Mo.

Atlantic Terra Cotta Monthly Brochure No. 4—Illustrates Chiesa del Corpus Domini, Bologna. 7 full-page plates. Atlantic Terra Cotta Co., 350 Madison Ave., New York.

Specifications for Inter-phones—Loose-leaf bulletin of specification data for intercommunicating telephone systems. 64 pp. 8 x 11 in. Western Electric Co., 195 Broadway, New York.

Batchelder Tiles—A catalog of mantel designs. Colored frontispiece. 30 full-page measured drawings. 8½ x 11 in. Batchelder-Wilson Co., Los Angeles, Cal.

Architectural Terra Cotta—Standard Construction—A collection of 70 full-page plates showing best types of constructions in connection with the use of Architectural Terra Cotta. Fully indexed. Size of page 10½ x 14; size of plates 8½ x 11. Bound in library buckram. National Terra Cotta Society, 19 West 44th St., New York.

Architectural Terra Cotta, Brochure Series, Vol. 1—The School—Half-tone reproductions with plans of school buildings of various sizes and types, showing application of Architectural Terra Cotta. 10½ x 14. 36 pp. **Vol. 11—The Theatre**—Same treatment of theatres and motion picture houses, showing many ornamental details; same size and uniform in style with Vol. 1. **Vol. 111—The Store**—Large and small store buildings are treated in this volume. Examples of the successful uses of Architectural Terra Cotta in many parts of the country are well presented. Uniform in size and style with Vols. 1 and 11. National Terra Cotta Society, 19 West 44th St., New York.

Architectural Terra Cotta, Brochure Series, Vol. IV, The Bank—Half-tone reproductions of both large and small bank buildings showing application of Architectural Terra Cotta in various finishes. 10½ x 14 in. 36 pp. **Vol. V, The Garage**—Uniform with the rest of the series showing garages of many types in Architectural Terra Cotta, either entire or in combination with brick. Copies of these brochures may be had on application to the National Terra Cotta Society, 19 West 44th St., New York.

Terra Cotta Defined, Brochure Series Vol. VI—A profusely illustrated treatise defining the use of Architectural Terra Cotta in the retail store, theatre, office building, bank, school, public building, the "tax payer" and the "rundown" building. Many details of ornament. 32 pp. 8½ x 11. The National Terra Cotta Society, 19 West 44th St., New York.

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COLOR IN ARCHITECTURE

A MATTER that has not been given the careful attention it needs is color in architecture. Towns and cities that are a patch-work of color are, perhaps, worse than cities that have practically a dead level uniformity of color owing to the prevalence of some local material, but there need not be either a riot of color or a poverty of color. The monotony of a prevailing material can be relieved by a judicious use of other materials that will give the needed color accent.

Color in architecture of course does not necessarily mean spots of brilliant hue, it may mean the general color of the material of the building, pleasing or otherwise. In any case it is a matter that needs more consideration.

In a paper on "Color in Architecture" recently read before the Royal Institute of British Architects, William Harvey presented the subject in a thorough and scholarly manner. Below we quote a few paragraphs of Mr. Harvey's paper from the report in the *Journal of the R. I. B. A.*:

"In some way or another color is bound up in the appearance of all architectural works, and when not formally invited it is rude enough to intrude its presence unasked. The color of materials available at certain sites controls the finished effect of many works of architecture."

"In both Jerusalem and Tiberias the same type of design is adhered to in the old domestic architecture; but whereas the one city, built of creamy limestone, is full of charming color harmonies in relation to its surroundings, the architectural appearance of the smaller town is rendered dismal by the use of a local stone of sombre black-blue hue."

"It is the misfortune of England at the present time that some of the most generally useful and economical bricks happen to possess a hard, unpleasant tint of pink, whilst brick of a really beautiful color can only be obtained at much greater cost. Fashion has something to do with our taste in bricks, and the only thing to steady our judgment is to ask ourselves whether the color value of such and such a building material really goes well with the other things in the picture—the sky and clouds and foliage, if there is any in the neighborhood."

"Old London stock bricks, with their varied tints, including some black and red among the yellow,

stand well under the gray skies and soot of London, and it is a pity that they were ever improved into dull informity. If anything, a little more variety would have improved them, and in the hands of architects who had an eye for color they were given dressings of richer tint or banded with diagonals of vitrified headers."

"The use of painting on ancient Greek architecture, where an inclement winter must have acted adversely to applied pigment, may have been encouraged by the example of Egypt, where painting had proved successful in a dryer atmosphere."

"Ornamentally-colored terra-cotta seems to have been used at the eaves of some primitive temples. Fragments of architectural painted tilework, supposed to date from the seventh century B. C. were found at the shrine of Artemis Orthia, the goddess of Sparta, in the excavations of 1908, and are described in the *Journal of the British School at Athens* as 'painted tile; tongue pattern in reddish-brown and a mæander in white paint.'"

Mr. Harvey went on to describe in detail the use of color in the old buildings of Egypt and the Orient, as well as in Great Britain and Western Europe, revealing the rich store of suggestions for the use of color to be found in historic work—a profitable study.

THE SPECIFICATION NUMBER

THE issue of *PENCIL POINTS* for January, 1923, will be the special Specification Number. That issue will be packed with material for specification writers contributed by specification writers. The opening article will be by Mr. Ward of the office of Carrere & Hastings. The big feature of the number will be a symposium on "The Practice of Specification Writing," in which specification writers in all parts of the country will describe their methods and give outlines of their specifications. Mr. Holske, in charge of the preparation of specifications in the office of McKim, Mead & White; Mr. Tallman of the office of Warren & Wetmore; Mr. Wessels of B. G. Goodhue's office, and many other able specification writers have already promised to contribute. There will be much other matter on various sides of specification writing in the special number for January, 1923.

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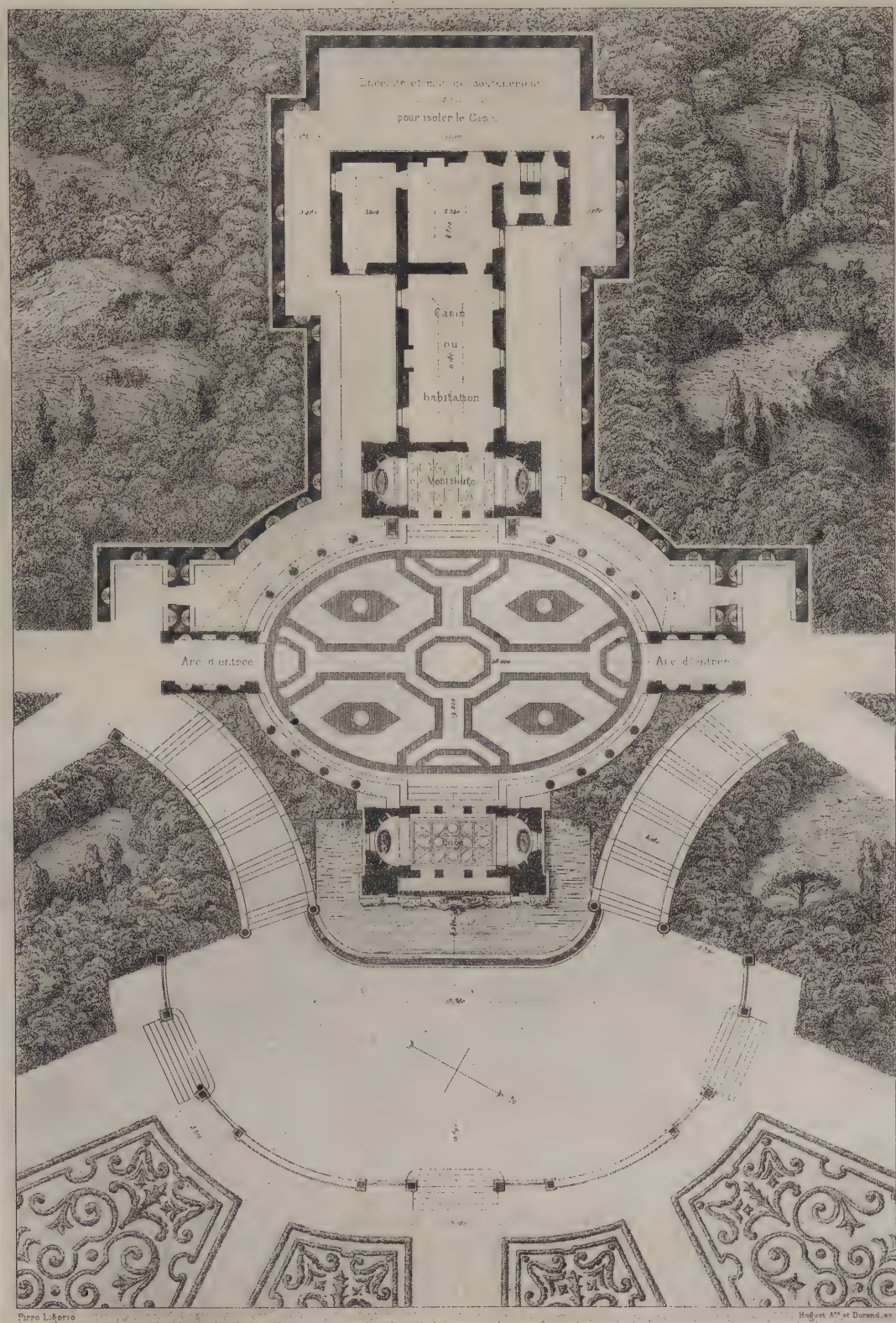


Figure 169. Plan of the Villa Pia in the Vatican Gardens, Rome. From Letarouilly's "Vatican."

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE
OF DESIGN

CLASS B. PLAN PROBLEM. PART X.

Entourage

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive.—Ed.

WE HAVE spoken of mosaic as something entirely within the plan. Of course a presented drawing must show the relation between the building, or group of buildings, and the site on which they stand; and if this site is a sloping one, requiring terraces and stairs, or is in a garden or park, the portion of the plan outside the walls of the building is frequently of as much importance and requires as much study as that within. In Figure 169, a plan of the Villa Pia in the Vatican Gardens at Rome, the small court is the heart of the composition; the rooms in the casino are relatively of minor importance.

Even in such a plan as that which won the Grand Prix de Rome in 1913, Figure 170, though the rooms of this "Presidential Mansion in the Capital of a Large Republic" are large, ornate, and in imposing suites, it is easily seen of how much importance is the garden setting. The arrangement of this setting, the disposition of the site in relation to the buildings, is called the "entourage." This term is also used of the setting, the surroundings, of an elevation, of which we shall speak later.

Here again we have the same problem of a composition of fields and

bands of grays, blacks, and whites, with accents of spots and points. As in the case of mosaic, success depends upon getting an "effect." The average student leaves all question of entourage until the last days of a problem, frequently until after the drawings have reached the final paper, and then tries to jumble something together to make a presentation and frequently finds that the building he has designed fits very awkwardly on the given site. This is quite unsatisfactory. The entourage, like the mosaic, must be studied from the start, and

carried along with the study of the building, the big masses of the composition merely indicated on early studies and actual drawing left until toward the end. The effect may easily be studied by making rapid studies on tracing paper with charcoal and chalk. The entourage must help to explain the student's solution of the problem; the "big idea" must be kept in mind.

It is well to remember that while your problem calls for plan, section, elevation, of a composition (whether building, arrangement of garden elements or what not) in three dimensions, these drawings are presented in two dimensions. They are flat, and to look

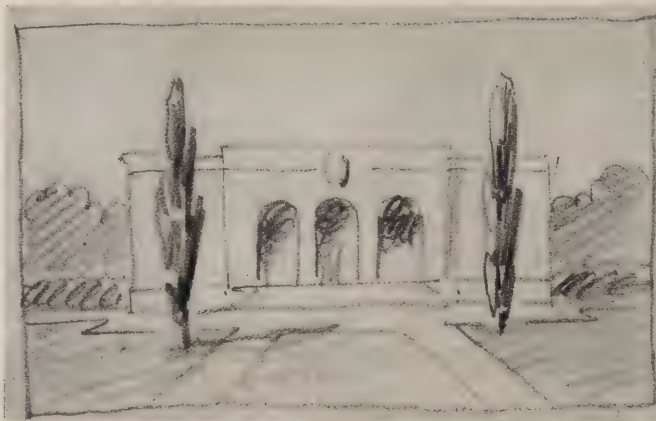


Figure 175.

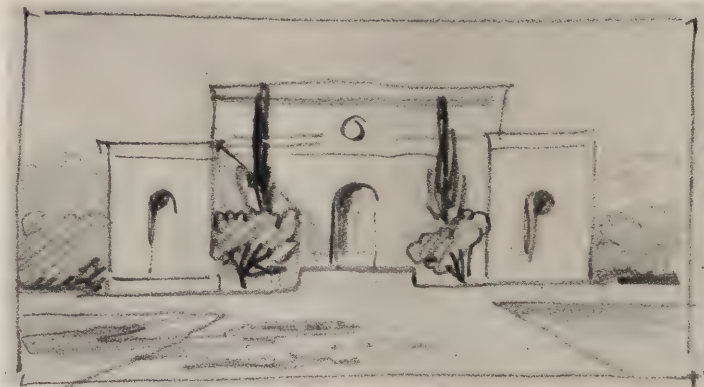


Figure 176.

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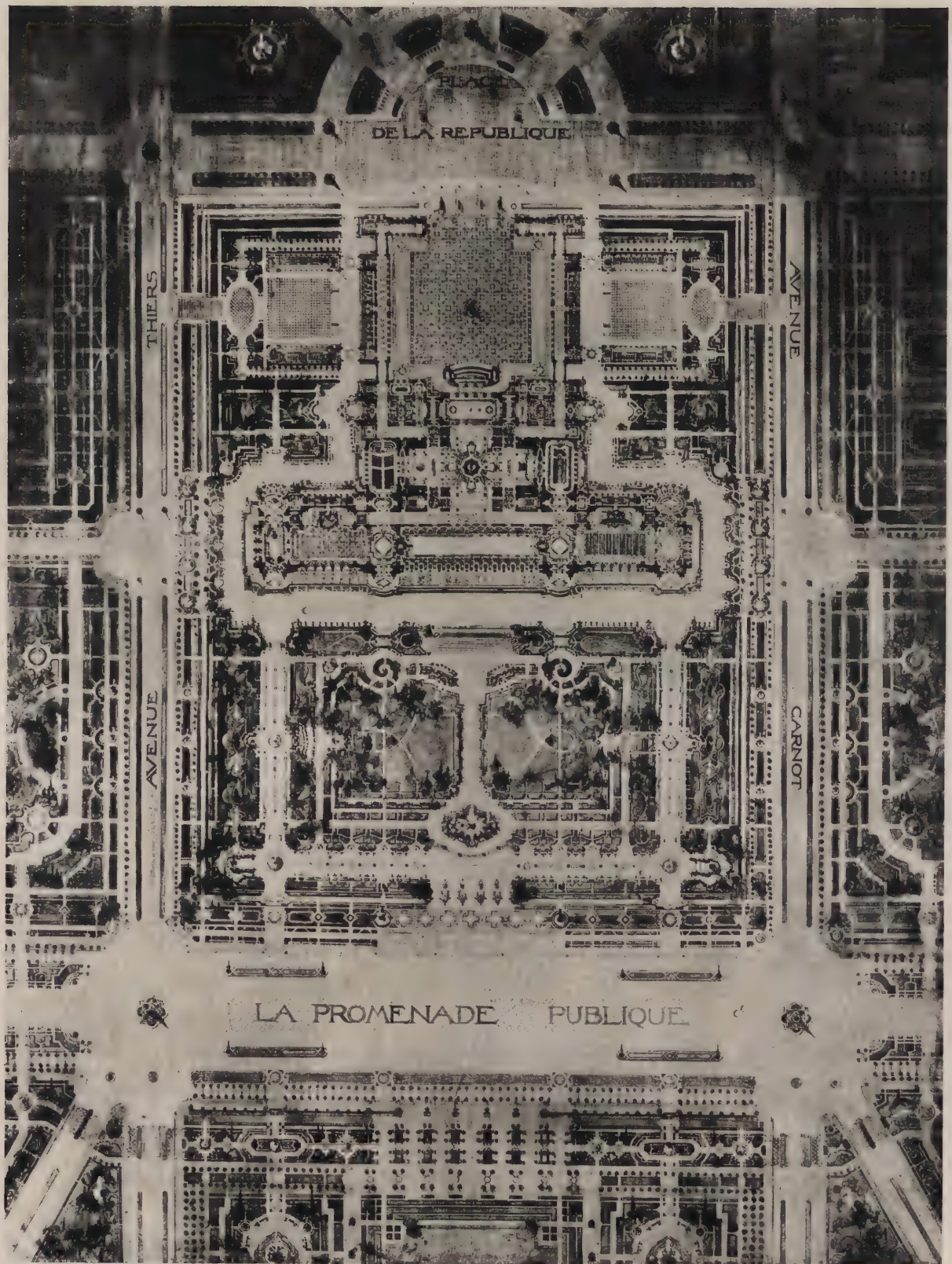


Figure 170. "Un Palais de la Présidence dans la Capitale d'une Grande République. M. Roger Séassal, Pupil of M. Héraud, Grand Prize 1912-1913, Ecole des Beaux Arts, Paris.

PENCIL POINTS

well, to have a satisfactory psychological effect on the jury, these drawings, as drawings, must be composed in two dimensions. It is for this reason that the study of entourage is of great importance.

Now the drawing of this entourage puzzles many students. They ask, for instance, the meaning of all the lines in the foreground of the plan shown in Figure 170, and when told that the bands of gray may represent plots of grass, or hedges, or lines of clipped trees, flower-beds, balustrades, that in some cases, in such a plan, almost any of these names might be applied to a given band or field, they are still more mystified.

But if we turn now to an air-plane photograph, the matter will be much clearer. Figure 171 is such a view of Versailles, and taken at sufficient height to be almost a plan. Compare this with the plan of Figure 170. We find the same fields and bands of white, black and gray, and the same points and spots used as accents. Even looking at the foreground of the air-plane view, we could not say definitely if a particular band were grass, or a hedge, —a path, a step or a balustrade. The fact is, it does not matter. If just a portion of the garden were the subject of the program, then of course these details would be of importance and the study would be at larger scale, we should have a "close-up," to borrow a term from the moving pictures.



Figure 172. The "Grand" and the "Petit" Palace, Paris, Photographed from an Air-plane.

Air-plane photographs have been common since the war. Many of the important buildings of our country and of Europe have been so shown in recent newspapers and magazines. They are not only good documents for the study of plan, especially of entourage, they are also excellent aids in rendering. In the view of Versailles, and also in that of the Grand and Petit Palais at Paris, Figure 172, note the difference in value of the grass and of the trees; between pavement, almost white, and street, a perceptible gray; note in Figure 172 how the curb is given a shadow

on one side of the street (as is frequently done in rendering by a ruling-pen shadow), and also how snap and life are given by the shadows cast by trees, lamp-posts, etc.

The plan of Figure 170 is, of course, a tremendous thing. Many small portions of it, about an inch square, would make a fair-sized Class B plan problem; for instance, the small music pavilion, and

the small garden theatre, and the cascade, all on the horizontal axis through the centre of the large garden.

It is because such a plan does have so many Class B plans within it, and also because the study of architecture will ultimately lead to such big compositions, that they may be of use as documents at this time, if one will only keep in mind the true scale of such a plan and its relation to the scale of plan on which one is working.

(Con. on p. 40)

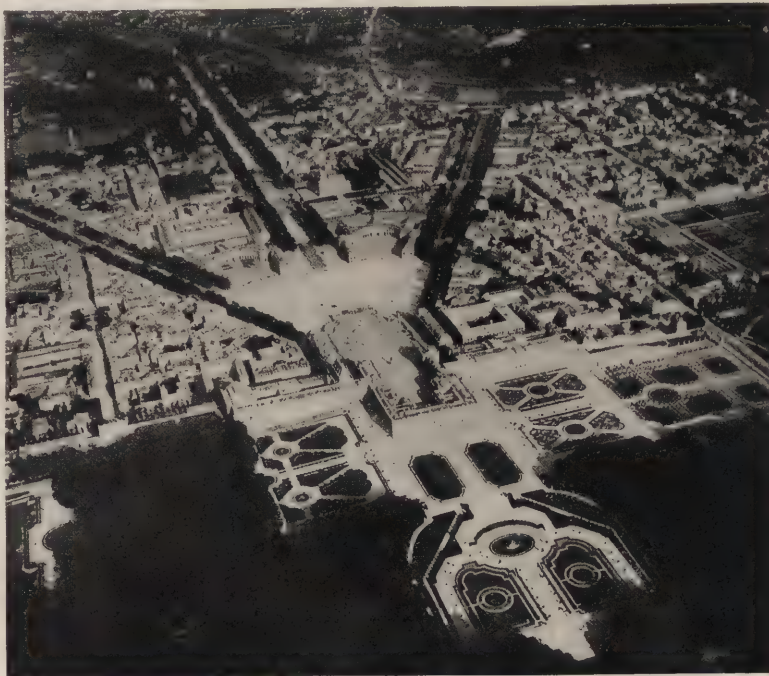


Figure 171. Versailles, Photographed from an Air-plane.

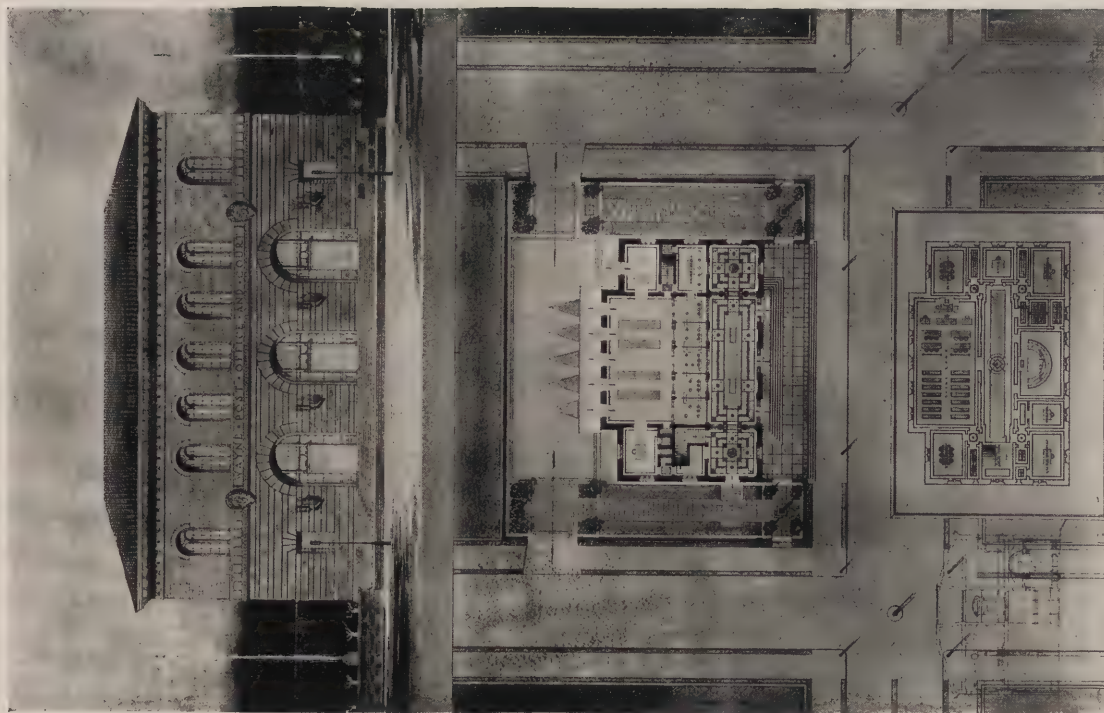


Figure 173. Class B Projet, "A Federal Building for a Small Town." P. N. Jensen, Atelier Wynkoop.

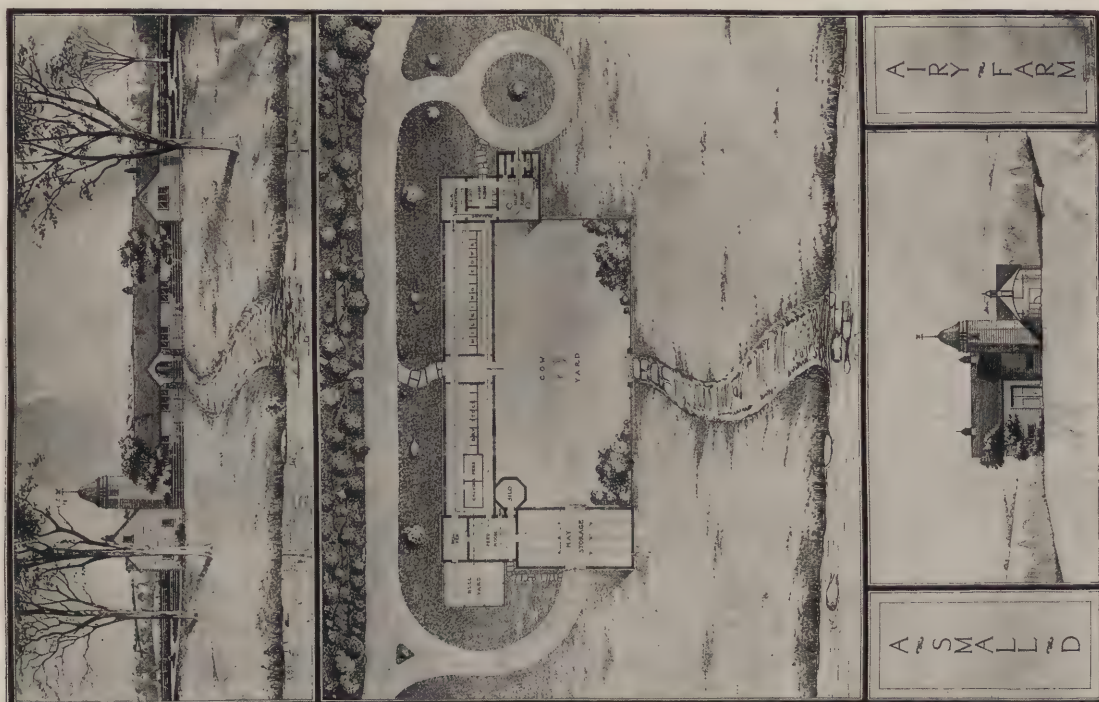


Figure 174. Class B Projet, "A Small Dairy Farm." John Regan, Atelier Wynkoop.

A VOCABULARY OF ATELIER FRENCH. PART VII

BY RAYMOND M. HOOD

This is the seventh installment of a vocabulary which Mr. Hood, *Architecte Diplômé par le Gouvernement Français* and Chairman of the Committee on Architecture of The Beaux-Arts Institute of Design, is preparing especially for this journal. It will be of special value to students in the ateliers in this country as well as to those who may later study at the *Ecole des Beaux Arts* in Paris, for there has been, we believe, no vocabulary published giving the special meanings of these words as used in the architectural atelier. As it is believed that an attempt to indicate the pronunciation would be futile, no such attempt is being made here; the pronunciation should be learned from someone who speaks French correctly.—ED.

P—(Continued)

Punaise: *n. f.*; a bed-bug; also, a thumb-tack.
Projet: *n. m.*; a project, problem, set of drawings.

Q

Quart: *n. m.*; a quarter of an object; *quart (de bière)*, a small glass of beer, holding a quarter of a litre.
Quaz' Arts: slang for *quatre arts*; the four arts, i.e., architecture, sculpture, painting and engraving.
Queue: *n. f.*; tail; *faire la queue*, to get in line.
Quinconces: *n. m. pl.*; a grove of trees regularly planted forming lines, up and down, crossways and diagonally.

R

Rabiot: *n. m.*; slang, extra time as a penalty for time lost, or work not finished.
Raclée: *n. f.*; slang, a volley of blows, a pommeling.
Rafistoler: *v.*; to repair poorly, or clumsily.
Raffer: *v.*; to take away rapidly, to clean out,—as in robbing or in winning at cards.
Rallonge: *n. f.*; anything that serves to extend; *arch.*, an extension bar of a compass.
Rampe: *n. f.*; a flight of steps.
Rapin: *n. m.*; a young student of painting.
Rasant: *adj.*; fatiguing, annoying.
Raser: *v.*; to shave; slang, to bore, to annoy.
Rater: *v.*; to miss, to fail, to be unsuccessful.
Relevé: *n. m.*; *arch.*, a restoration.
Rendu: *n. m.*; the coloring of a drawing; also, the finished projet; also, the delivery of the projet.
Repêcher: *v.*; to fish out of a hole, to bring out of danger.
Retaper: *v.*; to retouch, or touch up a drawing or painting.
Rez-de-chaussée: *n. m.*; ground floor of a building.
Ribote: *n. f.*; slang, excess in eating or drinking.
Rigolade: *n. f.*; a happy time.
Rigoler: *v.*; slang, to amuse one's self greatly.
Rigolo: *adj.*; slang, comical, pleasant.
Rinceau: *n. m.*; *arch.*, a running decoration in the form of alternately reversing curved branches.
Rond: *n. m.*; circle, ring; slang, a cent.
Rosace: *n. f.*; a rose window, or a circular spot of ornament based in form on the growing flower.
Rosse: *n. f.*; an ugly person; *adj.*; slang, ugly, mean.
Roublard: *n. m.* and *adj.*; a clever person, one who knows how to look out for himself.
Roulant: *adj.*; rolling; also, comical, funny.
Rouler: *v.*; to roll; also, to cheat, to get the best of.
Roupiller: *v.*; slang, to sleep.

S

Sabotage: *n. m.*; the intentional ruining of a piece of work, usually one's own.
Saboter: *v.*; to work quickly and badly, to ruin.
Saillie: *n. f.*; a projection, something in relief.
Salade: *n. f.*; a salad, also, a mixture.
Salaud: *n.*; slang, a dirty, indecent person.
Saleté: *n. f.*; filth; also, a vile action, a poor piece of work.
Saligaud: *n.*; slang, same as *salaud*.
Salon: *n. m.*; a reception room.
Saloper: *v.*; slang, to do a piece of work badly.
Saloperie: *n. f.*; slang, work badly or sloppily done.
Sanguine: *n. f.*; a red crayon used for free-hand drawing.
Saoul: *adj.*; slang, drunk.
Saouler: *v.*; slang, to intoxicate.
Saoulographie: *n. f.*; slang, a souse-party.
Sapin: *n. m.*; a pine tree; slang, a public hack.
Sauce: *n. f.*; sauce; also, a black, grease crayon used with a stump in making drawings.
Seau: *n. m.*; a pail.
Service: *n. m.*; service; *arch.*, (in the plural) the part of a building devoted to the services.
Solve: *n. f.*; a joist.
Sommeiler: *n. m.*; the waiter in a restaurant in charge of the wines.
Sottise: *n. f.*; a stupidity.
Soubassement: *n. m.*; the basement of a building.
Sous-sol: *n. m.*; cellar.
Symphyse: *n. f.*; a fixed articulation.
Synchse: *n. f.*; confusion in the order of words.

T

Tapage: *n. m.*; a racket, a din.
Taper: *v.*; to tap, to strike; slang, to borrow from a person.
Terrain: *n. m.*; plot of ground.
Tenue: *n. f.*; appearance.
Tête: *n. f.*; head; *faire la tête*, to get huffy, to pout.
Tire-ligne: *n. m.*; drawing pen.
Tire-rond: *n. m.*; twirlers.
Torchon: *n. m.*; a coarse towel.
Se tordre: *v.*; to be convulsed with laughter.
Tracer: *v.*; to trace, to draw.
Trait: *n. m.*; a line.
Tréteau: *n. m.*; a saw-horse.
Treillage: *n. m.*; a trellis.
Tricher: *v.*; to trick, to cheat.
Tripoter: *v.*; to manipulate; of a drawing, to fuss up.
Tuyau: *n. m.*; a pipe; slang, inside information, a tip.

TOPOGRAPHICAL CONTOURS

BY A. F. BRINCKERHOFF

In this article Mr. A. F. Brinckerhoff, of the firm of Vitale, Brinckerhoff and Geiffert, Landscape Architects, explains clearly the meaning of contours as shown on topographical maps, a matter that, though it lies in the field of the landscape architect rather than in that of the architect, enters into the architect's work insofar as the location of the building or buildings and the placing of rooms in relation to the views and to the landscape treatment are governed by the character of the site.

THE architectural draftsman is occasionally confronted with a topographical map and required to make a presentable scheme for the location of a dwelling or other structures, the means of approach to the buildings, and the necessities and requirements that go with the development of a project on virgin or open land.

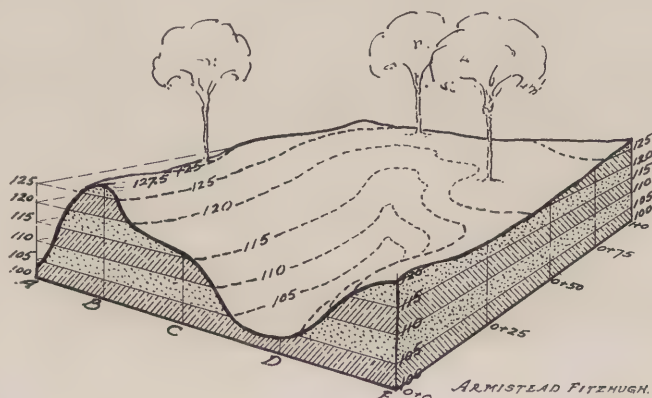
To one who does not happen to have had experience with maps of the kind this may seem like some new kind of puzzle, and it will be the purpose here to help him in familiarizing himself with the use of contours and what they really mean.

As a starter he might take a day off and armed with a large roll of coarse twine or clothes line and a mason's level go to the open country where the surface of the area is rolling and fairly clear. Starting at any point on this area, except the highest or the lowest point, he should place his level on the ground in contact with the surface, adjusting it until the bubble hits the mark at the centre; before removing it peg the end of the twine to the ground at one end of the level and pay it out on the ground adjacent to the full length of the level. When this is done he should pick up the level and repeat the operation from the point where he last laid down the twine. By repeating this operation many times he will have exhausted his supply of clothes line, and can then stop to inspect what he has accomplished. He will see a wiggly line which may in itself appear without reason, but if he will stop to observe, he will realize that it is a tangible representation of a contour—contours being imaginary level lines in contact with the surface of the ground throughout. He will realize that if he were to repeat this process at varying levels on the same area that the string or contour must close on itself either within or without the area in which he is operating. If it closes on itself within the area of his operations either a summit or a depression will be represented. He will find that no portion of his clothes line has ever come in contact with an-

other portion, except at such point as it may close upon itself. Where the slope of the ground is uniform he will notice that the successive lines of his twine will be at even intervals, providing he has been careful in starting each time at a uniform difference of elevation from the previous application of the line. He will see in crossing a valley that

his line has run toward the head of the valley at one side and turning at the stream or valley line has run back on the other side.

Another tangible indication of a contour is the shore line of a lake or other still body of water, and the demonstration is here accomplished less arduously by noting the various water level lines along the shore of the pond where the water level



Graphic Diagram A.

has been lowered in successive stages.

Another method for beginners to adopt in starting the study of contours is to make a model to scale by the use of ordinary, every-day paste-board, one sheet being cut to the line of each contour as represented in the topographical survey. Each sheet should be numbered as it is cut to avoid confusion later. The sheets should then be built up successively, pasting each one securely as it is laid. The thickness of each sheet should correspond to the contour intervals. Ordinarily on a survey at a scale of one inch to twenty feet, the thickness of such sheets represents an interval of one foot. After all the sheets are in place and permanently secured the whole surface may be covered with some plastic material such as plastein. When this is smoothed and moulded to the line of the grade an area in miniature is created corresponding in its varied surface to the actual ground area which it represents. It may be made more realistic and complete by the addition of trees, walks, buildings and other physical features, care being taken that they are made true to the scale of the map.

The accompanying diagrams are intended to show in graphic form the characteristics which the experimenting designer may have already discovered for

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himself by following the above process.

Diagram "A" represents an actual bit of rolling land in perspective with two sides of the area sliced off to demonstrate in graphic form the roll or slope of the land. The contour interval represented in this case is five feet and each five foot interval is shown as a separate layer.

Diagram "B" represents the same area laid off in equal squares, each twenty-five feet or a multiple thereof, with a section through the AE-00 line. This corresponds to the front edge of diagram "A."

Elaborating somewhat more, we have Diagram "C" indicating a larger area and including the proposed features such as house site, terraces, roadway and modified surfaces. The original or existing levels are represented by dotted contours, the proposed modified surfaces by contours in solid lines. The valley has been dammed, thus creating an artificial pond with a natural or curving shore line. The modifications of the existing topography is further represented by a section adjacent to the plan which represents a slice cut through the extended axis line of the house.

It should become evident that it is possible to calculate the amount of material involved in the proposed grading by running corresponding sections through the area, preferably equal distances apart. To make such a calculation the areas in the section representing cut and those representing fill are measured. To obtain the average of the filled series of areas multiply the results by the total distance between them. The last section on each end should be averaged off to zero, or theoretically one-half the average distance between the sections. The results represent the cubic feet or yards to be cut and the cubic feet or yards required to accomplish the filled areas. In calculating for actual earth content judgment must be used in so placing the section lines as to cross the contours as nearly at right angles as possible.

Some day the designer may be called upon to establish the lines for a roadway on a hillside at a given or required percentage of slope. When he has reached this stage of his progress he will have learned that a roadway having a rise of one foot in 100 feet is said to have a grade of one per cent. If the rise is ten feet in 100 feet, it has a ten per

cent grade. To obtain, therefore, a ten per cent. roadway on a survey representing a hill side, he would take an ordinary pair of dividers, set them at an interval of ten feet, corresponding to the scale of the survey, and step them along from one contour to the next on the map, marking each point of intersection. By running a line through these points of intersection he would represent the centre line of the proposed roadway. The only grading involved in constructing a

road thus located, would be the removal of sufficient material from the up hill side to cover the necessary and corresponding fill on the down hill side. He will realize, however, that it is rarely possible or desirable to adhere exactly to this theoretical location but as an aid, he will appreciate that the practice is very helpful and results in a location calling for a minimum amount of surface change, and resulting in an effect that will appear much more natural than if the road were established on an excessive fill or in a corresponding cut.

Sooner or later the designer comes to realize that contours may be used both as a mechanical aid in designing for effect only, and as a scientific aid in locating all required features, such as buildings, roads, walks, water courses, etc., and in calculating the amount of material involved in any change incident to their accomplish-

ment. He will, in fact, have become pretty well addicted to their use, and appreciate that designing with contours is not only a very necessary practice to secure the most satisfactory results but is a fascinating and pleasureable occupation. It is convincingly accurate as to the practicability of the grading scheme and offers a comprehensive method of designing expansive areas for effect and for use.

TO STRENGTHEN interest in the "Own Your Home" idea a motion picture film will soon be released showing the building and furnishing of a home from the beginning. A beautiful lot in Glen Ellyn, Ill., was chosen as the site and the scenario is said to be strong in human interest. The film will be shown under the auspices of real estate boards, clubs and other organizations. Applications for bookings are now being received by The Atlas Educational Film Co., Oak Park, Ill.

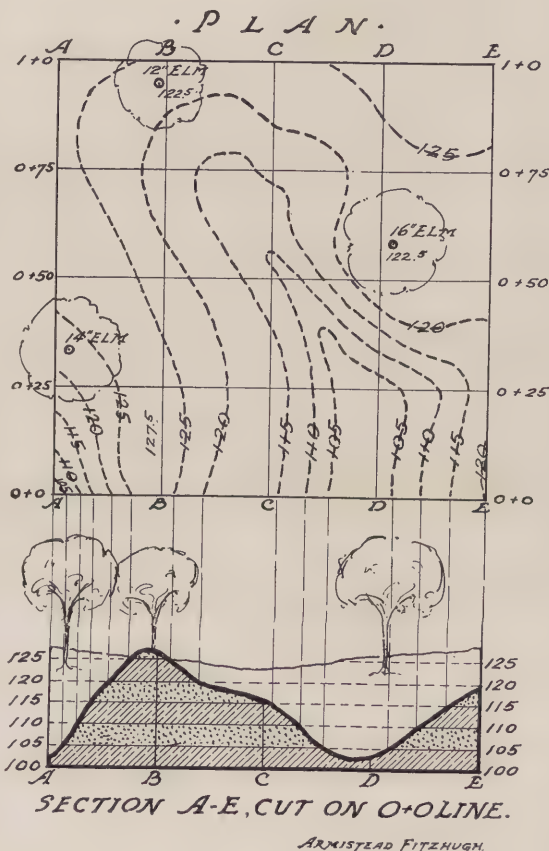


Diagram B.

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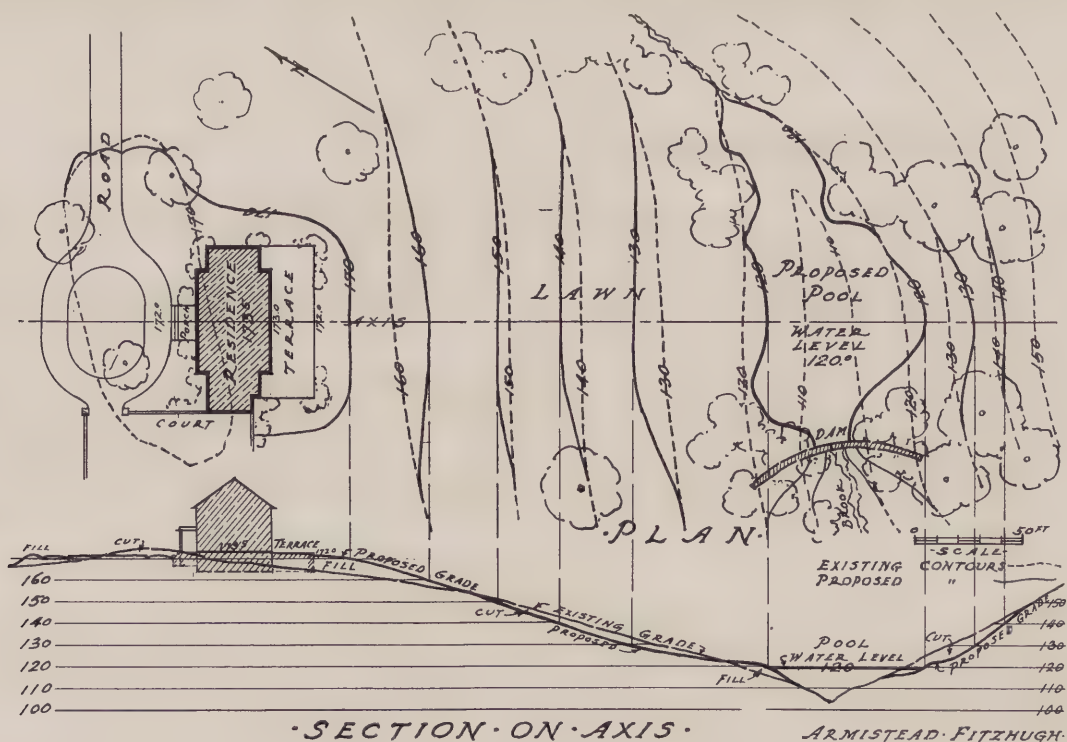
ACROSS THE SEAS.

GREETINGS to Mr. S. H. Buchanan, Sydney, Australia, and to Mr. T. R. Hall of Brisbane. We hope that these two able architects from a far off land have completed their tour of inspection of architecture as she is done in America and that they are carrying back home with them at least some of the information they came here to get.

These visitors blew into the office one night just as we were locking the safe, carrying the message that PENCIL POINTS was going big in Australia. We knew we had quite a lot of subscribers there, but had never met any of them. We thought, after talking with Messrs. Buchanan and Hall, that it was altogether too bad that the architects and draftsmen of this country did not know more about what was going on in Australia and this led us to the further thought that things going on in architects' offices in other parts of the world covered by our subscription list would undoubtedly prove interesting to many of us here in America. Great Britain, India, South Africa, New Zealand, to mention first our English speaking points of contact, have all shown a keen interest in PENCIL POINTS. One venturesome soul, Mr. Fry of Liverpool, even had the temerity last year to enter the Birch Burdette Long Sketch Competition and was awarded one of the prizes. It is our hope that this year many more sketches will come to us from without the borders

of the United States in the sketching competition and we would also like to have our subscribers in various parts of the world let us know something about what they are doing. Occasional letters describing methods of work, office organization and ways of doing things generally will be gladly received, as will also interesting drawings and articles dealing with the drafting room and the problems centering there.

We should like to know something about the architectural clubs and schools and, in fact, we are distinctly curious regarding everything pertaining to the practice of architecture wherever readers of PENCIL POINTS are located. So we extend a cordial invitation to all of you who do not happen to be located within our borders, but who are, we feel, akin to us professionally, to take the same interest in contributing to the editorial columns of PENCIL POINTS as has been shown by members of the profession located in this country. After all, we in America are just as much interested in knowing what goes on in London or Cape Town or Paris or anywhere else as we are in what occurs in Chicago or New York, and we are frankly looking for ideas and suggestions and news items entirely apart from geographical considerations. It is our hope, therefore, that every reader across the seas will take this message as though it were a personal letter addressed to him and constitute himself a committee of one to start something in our direction.



Topographical Contours, Diagram C. See page 16.

FRAGMENTS ANTIQUES, VOL. II



RESTAURATION DU CHATEAU DE L'EAU IVLES

PLAN



RESTAURÉ

CHATEAU D'EAU AQUA GIULIA A ROME

relevé et restauration de l'auteur 1841

FOUNTAIN OF THE AQUA GIULIA, ROME
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

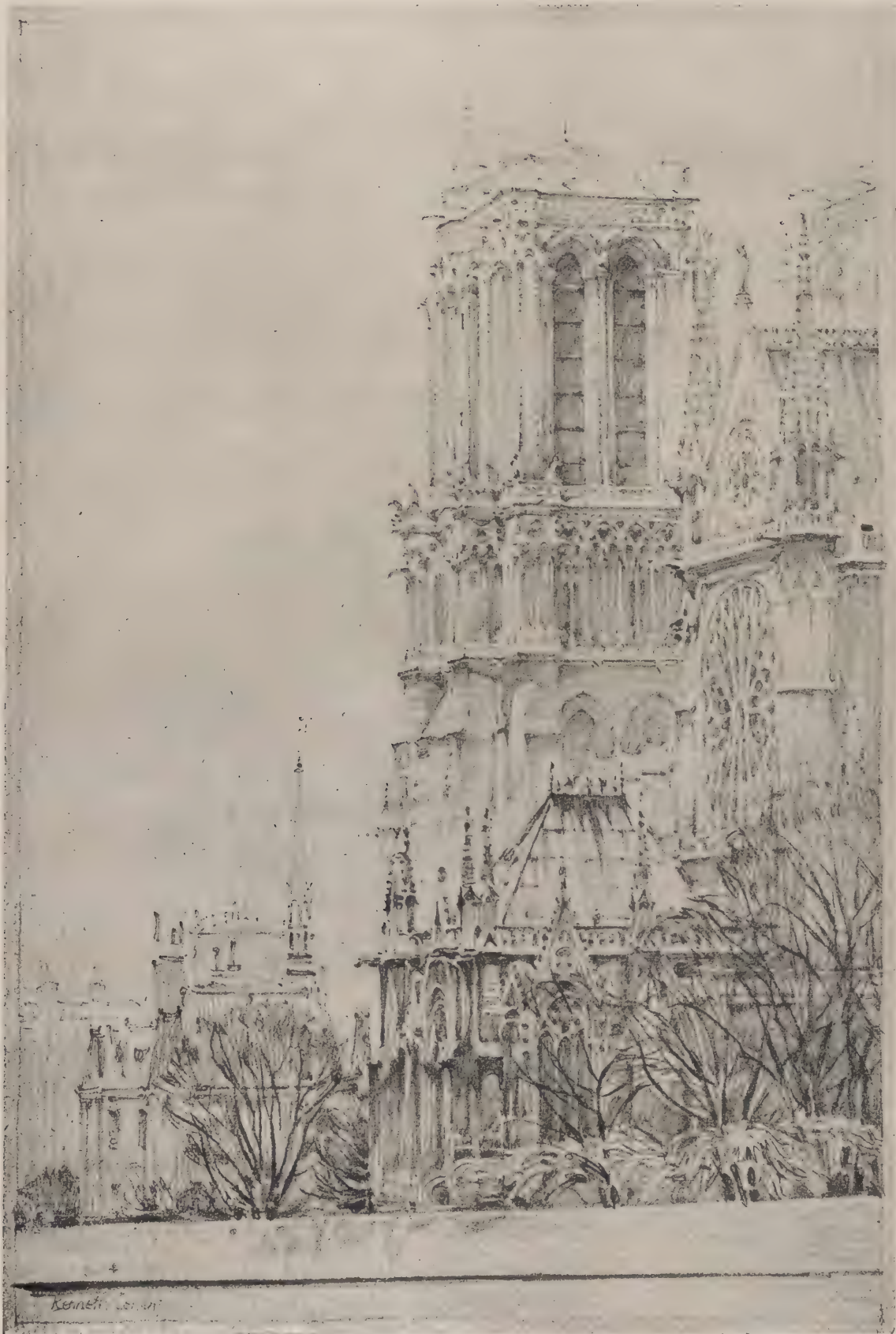
The plate reproduced on the other side of this sheet from H. D'Espouy's "*Fragments D'Architecture Antique*" shows a restoration by Garnaud of one of the most interesting of the fountains that formed the chief architectural features of the great Roman system of water supply.



CARTOON BY BARRY FAULKNER FOR A MURAL DECORATION
IN THE EASTMAN SCHOOL OF MUSIC, ROCHESTER, N. Y.

McKIM, MEAD & WHITE, ARCHITECTS.

The cartoon for a mural painting by Barry Faulkner reproduced on the other side of this sheet is one of a series made for the decorations at the right of the proscenium of the Eastman School of Music. These decorations were described on the back of Plate XXXIV in the September issue.



PENCIL SKETCH OF NOTRE DAME, PARIS, BY KENNETH CONANT

The remarkably sensitive and skilfully rendered pencil drawing of a portion of Notre Dame by Kenneth Conant, which is reproduced on the other side of this sheet is one of the finest examples of Mr. Conant's pencil work. It has been reproduced here at almost the same size as the original in order that the quality of the technique might be preserved as far as possible.



Courtesy of Kennedy & Co.

FIGURE STUDY BY TROY KINNEY

The figure study by Troy Kinney reproduced on the other side of this sheet at the same size as the original pencil drawing is one of the interesting sketches that this artist makes as preliminary studies for his etchings. They are made in order to fix an impression, and to serve as memoranda more or less complete in detail.

ARCHITECTURAL DETAIL PART XVIII

BY JOHN VREDENBURGH VAN PELT

This is the eighteenth instalment of an article in which Mr. John Vredenburg Van Pelt, formerly Professor in Charge of the College of Architecture, Cornell University, Architecte Diplômé par le Gouvernement Français, and author of "Essentials of Composition," will discuss the designing of good architectural detail and point out the means by which the ability to produce good detail can be developed. Reproductions of detail drawings from some of the best architectural offices will accompany this article and the publication of this series of drawings will be continued after this discussion of the subject has been completed—making a valuable feature of this journal indefinitely.

LAST month's article on brick courses gave a review of the common smoother textures. We had joints of $\frac{3}{16}$ of an inch and saw that they can be reduced below that with repressed brick. A smooth enamel brick with a straight edge and flat bed face might be laid with a joint $\frac{1}{16}$ of an inch wide. In such brick work the slightest spawl will show and great care must be exercised to prevent chipping. Furthermore the face of the wall must be laid in a perfect plane as recessions or protrusions become marked and seem out of place.

Rough-texture brick present a direct contrast to all this. The rougher the brick the more uneven may be and, within limits, the wider should be the joint. There is a relation between spawls and joints that all architects do not seem to have realized. These indentations along the edge of the brick fill with mortar and if such recurrent spots are equal in size to the joint they no longer remain accompaniments but usurp the principal role. Also the limited size of the brick itself may make a very wide joint ugly. Our old friend the law of contrast comes into play and demands that there shall be no uncertainty as to which dominates, brick or joint. To my way of thinking this point is illustrated in the Russell Sage Hall brick work, Example No. 18, on

page 31, to which we shall refer later on.

On page 28 are six illustrations of rough-texture or tapestry brick. No. 7 is a red brick of varying shades with a $\frac{1}{2}$ inch gray joint, the joint scraped or "rough cut" flush with the face of the brick. It is part of the Auditorium Building of the State Normal College at Albany, N. Y., designed by A. Randolph Ross. Note that this joint looks wider than that of No. 8, which is also $\frac{1}{2}$ inch wide, but raked back a full half inch. Furthermore the contrast of value is that of a light joint between dark brick in No. 7, while in No. 8, the joint, which is gray, is as dark as or darker than the gray brick it separates. These brick are $2\frac{1}{4}$ inch by 8 inch by

$3\frac{3}{4}$ inch. At the bottom of No. 8, in the brick band, the joints look wider and the brick narrower. The brick of No. 9, the same size as No. 7 and No. 8, are much darker than the gray joint and make it contrast sharply in light, but the joint is slightly raked back and the brick fully defined, so that the joints look only slightly wider than those of No. 8, not as wide as those of No. 7. From the above we may fairly conclude that a flush joint looks wider than one raked back and a white contrasting joint wider than a dark one. This is not fully appreciated by many designers. Indeed brick contrasts are closely involved with many effects of optical



*Detail of Brick Work, Town Hall, Clinton, Mass.
Peabody & Stearns, Architects.*

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Details of Brick Work. See Text Beginning on Page 27.

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illusions. This is one of the reasons why it is of such importance to lay up a sample at the site of the building before allowing the work to proceed.

Example No. 10 on page 28, is from the Brooklyn Carnegie Library, Glenmore Avenue and Watkins Street, Lord and Hewlett, Architects, the brick, brown-gray, $8\frac{1}{4}$ inch by $2\frac{1}{4}$ inch by 4 inch, the white joint being $\frac{3}{4}$ of an inch wide tooled flat. In the wall above the alternating bands of headers

and stretchers there are seven courses of stretchers, above this a band formed of three courses, header stretcher and header. Above this the seven stretcher courses and the band last described repeat.

Passing from the standard sizes, No. 11 on page 28 is a Norman brick from the Zeta Psi Club House, 181st Street and Andrews Avenue, New York, Squires and Wynkoop, Architects. These gray brick are long enough to take three headers which alternate with a stretcher in every third course. The raked gray joint is $1\frac{1}{4}$ inch wide. The middle header is dark and makes a diamond pattern in the wall. It might have been effective to let it project a little. No. 12 is a real Roman size 2 inch by 18 inch by 6 inch, a full range of varying reds. The gray joint, cut flush, is 1 inch wide.

On page 31, No. 18, the example to which we referred a moment ago is a peculiarly thin Roman, rough texture, the color varying from red to the dark blue flashing of that color group. The proportions are 55 per cent. red, 15

Note—In the text of the installment of this article which appeared in the September issue, the brick work of the Knickerbocker Club spoken of as being laid in Flemish bond should have been designated English bond.
—J. V. V. P.



*Detail of Brick Work, Draper House, Hopedale, Mass.
Bigelow & Wadsworth, Architects.*

ing in the stretcher course immediately over the soldiers where the place of every third stretcher is taken by two headers, doubtless for bonding purposes solely. It is from a restaurant on Sheridan Road, Chicago.

No. 17 is the rear wall of the Masonic Temple at Lafayette and Claremont Avenues, Brooklyn, Lord and Hewlett, Architects. The brick are $2\frac{1}{4}$ inch by 8 inch by 4 inch, laid up in an unusual manner, the execution of which involves overcoming a number of difficulties. Groups of two and four brick with a very close joint, at a distance look like enormous single brick contrasting markedly with the small bats of the broad band of headers laid with joints in line. The lack of good lateral bonding is not logical brick

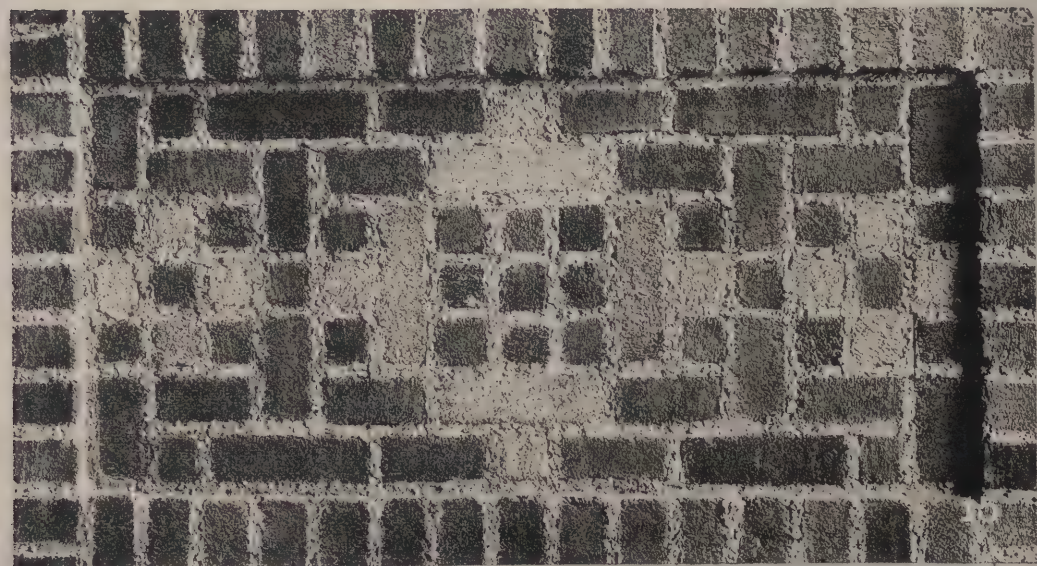
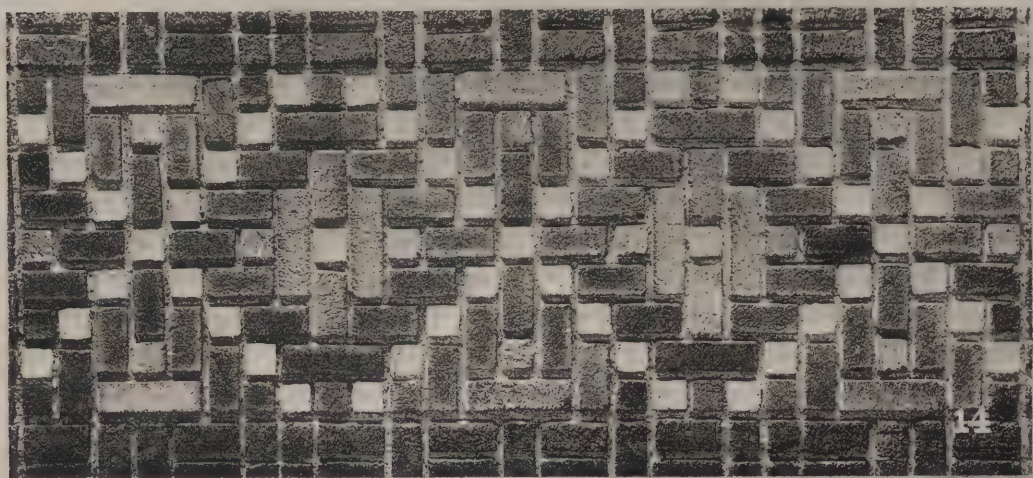
work and the wide joint, $1\frac{1}{4}$ inch to $1\frac{1}{2}$ inch, necessary for the contrast has to be built up and the successive layers allowed to set or else wedged as it is laid and filled in as it is pointed. On the other hand I agree that the pattern is effective.

No. 13 on page 30 is the cross motive of the demolished Parkhurst Church of New York. McKim, Mead & White, Architects. The brick is a Norman, fire cracked, (Continued on p. 37)



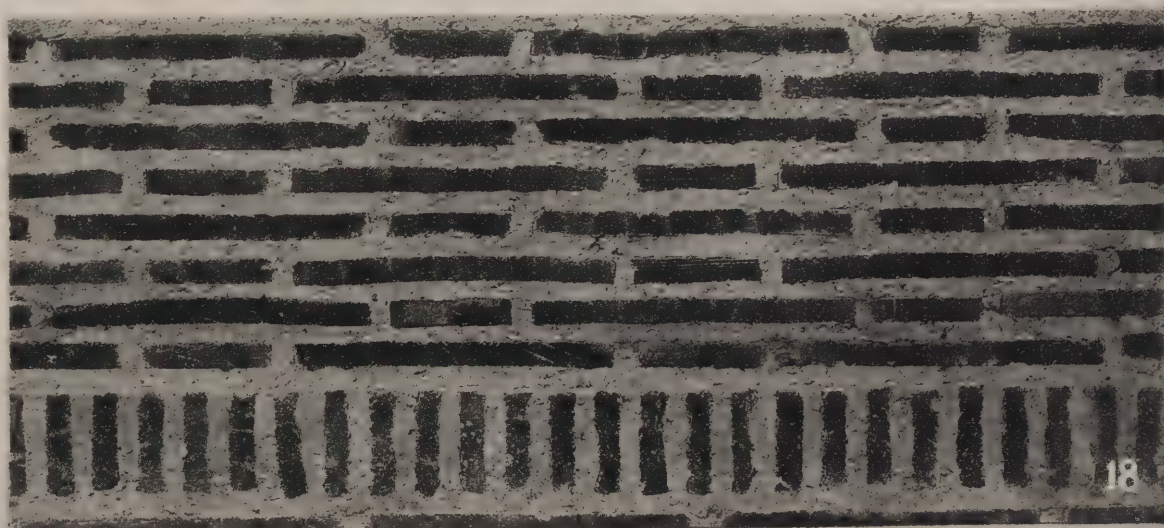
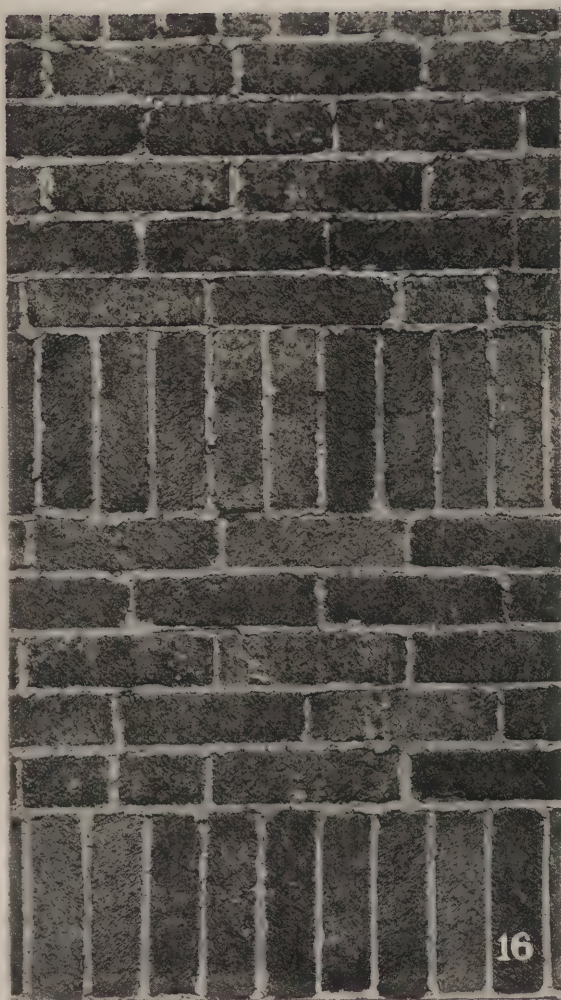
Mantel in The Gainsborough Studio Building, New York City. C. W. Buckham, Architect.

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Details of Brick Work. See Text Beginning on Page 27.

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Details of Brick Work. See Text Beginning on Page 27.

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Auditorium of The Capitol Theatre, Detroit, Mich. C. Howard Crane, Architect.



Auditorium of Loew's State Theatre, New York City. Thomas W. Lamb, Architect.

MOTION PICTURE THEATRE DATA, PART IV

BY EMIL M. MLINAR.

In this serial article Mr. Mlinar, who is the New York associate of C. Howard Crane, Architect, Detroit, Michigan, is going thoroughly into the practical considerations in motion-picture theatre design, presenting the data indispensable in designing and making drawings for such theatres. Mr. Mlinar specializes in theatre work and was formerly of the office of Thomas W. Lamb.—Ed.

HAVING considered in previous installments of this article the general requirements for a motion picture theatre and the special requirements to be met in designing the outer lobby, the inner lobby and the mezzanine, we come to the auditorium as next in order. This naturally is one of the most important parts of the building. In planning the auditorium the owner's requirements as to seating capacity are of so great importance, in order that he may secure a proper return on his investment, that the architect must keep these requirements constantly in mind and is often obliged to sacrifice some of his ideas in order to secure the greatest possible seating capacity. It is, therefore, only just in judging some of the theatre work recently completed to remember that, while these theatres may not represent, in every sense, the best architectural design, they are, nevertheless, regarded as highly successful solutions of the problem, inasmuch as they are good paying properties.

The Tivoli Theatre, Chicago, presents probably the most extreme of late theatre designs. The general arrangement of the auditorium of this theatre can be seen in the illustration. It will be noted that one of the important features is the horseshoe of boxes under the balcony. These boxes, of course, bring the highest prices—therefore, nothing has been left undone that would make them attractive and make their importance felt by the patrons. They have been supplied with draperies and "dressed up" in other ways. The balcony in this theatre may be criticized on the ground that it is very steep, but this was done for the purpose of obtaining a great seating capacity. Of course, the more shallow the stepping in the balcony, the fewer number of rows of seats can be had. I believe that in this instance the steppings are about twenty inches which is usual in a legitimate theatre where there is not a continuous passing of people during the perform-

ance. I believe that a more satisfactory balcony for a motion picture theatre is the one shown in the illustration of Loew's State Theatre, New York, where the steppings are twelve and one-half inches, as this makes the travel in and out very easy.

In examining the illustration of the auditorium of the Tivoli Theatre it is also well to note the loca-

tion of the various cross aisles in the balcony. While they are good for the purpose of effecting exit in the shortest possible time after each performance, there is also the disadvantage that patrons coming up from the various passages are continually interfering with the sight of those already seated. I believe, therefore, that a cross aisle located back of the loge boxes, which are



*Lobby of The Capitol Theatre, Detroit, Mich.
C. Howard Crane, Architect.*

placed in the front of the balcony, and a passage in the extreme rear of the balcony, make the most satisfactory arrangement, as this allows a subdivision of the people for the lower section of the balcony and the loges. During the time that the house is filled patrons can be made to walk to the rear of the balcony where the passage becomes a standing space, the same as in the auditorium, and this reduces the confusion. The tendency of people in leaving the theatre is to walk down to the lowest passageway and this allows those standing in the rear of the balcony to come forward and be seated.

In the illustration of Loew's State Theatre it will be noted that two cross aisles are provided, one back of the loges and one seventeen rows back of this cross-over, the reason being that the house is of such enormous depth that a price change was provided for after the second cross aisle. The balcony, therefore, has three prices. This is also the case in the Capitol Theatre, New York. In both theatres, the distance from the curtain line to the rear of the balcony is about one hundred and sixty-five feet.

The illustration of the Capitol Theatre, Detroit,

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shows it to be somewhat on the principle of the Tivoli Theatre with the horseshoe boxes under the balcony but, in this instance, only two cross aisles are used in the balcony proper. Here again the price change exists. In planning the balcony where such great depth occurs, it is essential to bear in mind the proper dividing lines of the seats. As a guide, I would say that a cross aisle nineteen rows back of the cross-over back of the loge seats is considered good practice. This usually allows about ten rows of the lowest priced seats.

The boxes under the balcony of the Capitol Theatre, Detroit, open out on the mezzanine promenade and this promenade connects with the stairs in the rear of the orchestra and also carries through to a stair in the outside lobby, as shown in the small illustration on page 33. A theatre planned in this way is adaptable to any kind of entertainment, inasmuch as the plan permits the division of the patrons in the main lobby and does not necessitate their entering the theatre foyer proper in order to reach the stairs leading to the balcony.

The mistake has often been made of designing a theatre without considering the fact that the house should be adaptable to different kinds of performances. The architects who specialize in this type of building always plan a motion picture theatre in such a way that it can readily be converted into a

theatre for legitimate speaking stage performances.

Although many theatres have been built in the West as far as Los Angeles and San Francisco which show a type of work that is well suited to the requirements in their own sections of the country, I believe that the ideas used in the Eastern theatres represent a more generally satisfactory type. The theatre-going public is daily being educated to an appreciation of good architecture and for that reason more and more money is being spent to obtain satisfactory effects.

It is a rather interesting fact that in every case the balcony of the theatre seems to contain the key to the design of the auditorium and the only explanation I know of for this is the fact that a special effort must be made to make the balcony attractive to the people—to overcome their feeling that the balcony is markedly a second-class part of the house. In the larger, more recent theatres, people are drawn to the balcony by the architectural treatment and in the case of the Capitol Theatre in New York I have observed that some of the patrons occupying orchestra seats make a special trip to the balcony to get a view of this portion of the house.

Some theatre owners believe that it is not necessary to give architectural treatment to the side walls

(Continued on page 39)



Auditorium of The Tivoli Theatre, Chicago, Ill. C. W. & George L. Rapp, Architects.

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THE AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following: "The most important news of the month is Mr. Rockefeller's donation, practically unrestricted, of \$200,000. Although this gift does not increase our income, yet it must be a tremendous relief to all the trustees, for, if invested at five per cent., it continues indefinitely what the Rockefeller Foundation has been giving us for the last nine years for running expenses.

"Mr. and Mrs. Charles D. Norton and their three children were in Rome for four days. They went through the studios and dined with us and they also had an interview with the Pope—that is, all but Mr. Norton, who was not well enough to go at the last moment.

"When Mr. George F. Baker, Sr., visited the Academy, he liked a Greek head which Sculptor Jones has modeled. With Jones' consent I have had a duplicate made and Jones himself is to put on the finishing touches and present it to Mr. Baker in October in New York.

"I am looking after the tombstone for Prof. Tracy Peck, a former director of the School of Classical Studies. He died in Rome last winter. The tombstone is a simple one, modelled after an old Roman one which Professor Peck had much admired. The grave is in the Protestant cemetery where Keats is buried and likewise the heart of Shelley.

"Miss Lily R. Taylor, of the Classical School, is in residence completing the term of her Fellowship. She has just given the first two hundred pages of her book on Etruria to the printer. She is a professor at Vassar and so much interested in the education of women that she is willing to try to collect \$100,000 for building a separate wing for women and endowing it.

"The summer school organized at the University of Rome by the Italo-American Society of Rome is in full swing and a number of our Fellows are following the courses in Italian literature to their great profit.

"A party of landscape architects, traveling under the auspices of one of the chapters of the American Society of Landscape Architects, has visited the Academy. We likewise had the pleasure of showing the Academy to a group of seventy university students who were being sent to Italy by the Italo-American Society of New York City.

"Miss Leila Mechlin, the editor of the American Magazine of Art, (formerly Art and Progress) called. She wants photographs of the men's work sent to her regularly for publication in her magazine. She will get them!

"Mr. and Mrs. Henry Morgenthau have visited the Academy; he was the American Ambassador to Turkey during the war.

"I am still working on railroad reduced rates for the Fellows. The law will have to be changed, but this does

not seem to be impossible. We have united forces with the Pensionati of the Italian Government, who have been trying to get the reduction for some time.

"Matters are advancing in regard to the closing of the street between the main building and the recently purchased lot. Mons. Ubaid has lost his first suit—a suit to prevent the Janiculum Land Company from building two walls across the road—and he will have to pay the cost of the suit. The city of Rome has relinquished all claim to the street—this is a great step in advance.

"The butler who stole some Academy silver last fall, although he has not been caught, was sentenced to three years and seven months imprisonment.

"On Fourth of July evening we had a small celebration for the students, consisting of fire works, ice cream and dancing. On the 29th of the month the celebrated Italian tenor, Gigli, sang for us. He has a very remarkable voice and everyone enjoyed him."

From a letter received from Frank P. Fairbanks, Professor in Charge of The School of Fine Arts, we quote the following: "Eight of the Fine Arts Fellows still remain in residence while four are travelling. To account for the domestic tendency of the majority it is necessary to realize that because of the lack of visiting students, only one having been in residence the last month, the Fellows find the Academy more attractive. They are able to concentrate more completely, with less interruptions, and most important to them, they find that they can more easily develop their knowledge of each other with a consequent deepening of friendships, than is convenient when there is a dominating number of visiting students.

"Of the architects in residence, James Kellum Smith is engaged on a careful study and rendering of the decorated vaulting by Pinturicchio of Santa Maria del Popolo. Smith's idea is to obtain in his second year's work a first-hand knowledge of at least one excellent example of decorative painting, ornamental sculpture—probably a fountain—and Renaissance architecture. For the latter, he has selected the Farnese Palace, the present French Embassy in Rome. Because he has found a scaffolding to the cornice of the palace already in place, erected by Architect Raffaelli who has charge of the repairs, and because we have succeeded in obtaining the rare privilege to circulate on this structure and take measurements, he feels that his opportunity is an important one. Thomas H. Jones, our senior sculptor, has assisted Smith in his measuring of the Farnese Palace and was much impressed with excellence of carving on the cornice details. He also remarked a decided concave wave in the wall of the front elevation as he looked along the façade. Jones, by the way, has been progressing with his final problem of a fountain with its surmounting female figure, three basins and enrichments of cherubs and dolphins.

"Our senior painter Lascari has taken advantage of Mr. Blashfield's visit to join him in Venice for a few days and travel with him to a number of important centres of mosaic industry and accomplishment. A reference is made to this trip in the very convincing language of Mr. Blashfield in a letter written to us from Venice in which he says: 'I cannot speak too highly of Mr. Lascari as a companion and of his consideration for and care of me. He takes every burden of travel off my hands. We inspected the mosaics in the baptistry of Florence together. Then, Mrs. Lascari remaining in Florence, Lascari and I went to Ravenna where we practically visited every mosaic, climbed scaffolds by permission, and talked with the restorers and handled the tesserae as they were being placed. Then we went to Pesaro, motored next morning to Urbino and back to Pesaro, slept in Ferrara and arrived here yesterday at about 4:30 at the hotel. Mr. Lascari is an admirable companion. He is setting an enviable pace with three large canvases going at the same time. Two of these contain arrangements of fine life-size figures and the principal canvas contains about ten figures of the same dimensions.'

"Griswold is well along with his study of the elevation of the gardens of the Villa Mozconi-Cicogna, the plan of which he showed in our spring exhibition.

"Hafner's restoration of the Basilica of Constantine progresses and Ciampaglia has his decorative painting well under way.

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"Cecere is developing his required relief, a hunting scene, with mounted figures, dogs and deer.

"Amateis, our first year sculptor, has been too long on his job and at Dr. Bastianelli's suggestion, we are urging him to defer his work and avoid a nervous breakdown by recuperating away from Rome and work.

"Chillman has just returned from England to France. He has been much interested to observe the comparative influence of the Renaissance on the best of English work. He hopes to go to Spain before returning to Italy.

"Schwarz is engaged on his copy in the Pitti Palace, Florence, and is to work on his first year figure under the influence of that excellent environment.

"Our composers Sowerby and Hanson have not sent us any comprehensive reports of their activities but they are as far on their itinerary with Professor Lamond as Vienna.

"At the moment of writing Director Stevens and Mrs. Stevens are well on their way to England for their holidays and fortunately just in time to avoid being held up by the nation-wide strike that is in operation on the first day of August. With a civic regulation that prohibits all public service utilities—trams, taxis, public carriages and even bicycles—from circulating, we are fairly well anchored here at the Academy. The awkwardness of this situation comes home to us in our endeavor to get money to a bank across the town in order to provide for Professor Lamond's urgent need of money to purchase pianos in Vienna for his department."

T-SQUARE ATELIER, PHILADELPHIA.

THE twenty-fifth season of the T-Square Club Atelier, Philadelphia, begins on September 23. At the first meeting Thursday evening, September 21, the program for the coming season will be discussed.

HOTEL PLANNING.

AN ARTICLE that contains much useful information appeared in the issue of "Hotel Management" for September under the title "Planning for Better Light and Air." This article is illustrated with plans and photographic views of a number of hotels. "Hotel Management" is published at 342 Madison Ave., New York. Twenty-five cents a copy.

This article shows an appreciation on the part of hotel men of the desirability of a clean-cut solution of the architectural problem presented by the hotel as well as a practical arrangement. A number of the hotels illustrated are unusual in plan and all of them are interesting and well worthy of study.

ON THE evening of October 10, a joint meeting of the Illinois Chapter of the A. I. A., The Illinois Society of Architects, and the Chicago Architectural Club will be held in the Assembly Hall of the Leiter Building, 15 East Van Buren St., Chicago. This meeting will mark the opening of an exhibit by the Associated Tile Manufacturers. The Indiana Chapter, A. I. A., the Central Illinois Chapter, A. I. A., and the Indiana Society of Architects have been invited to hold a meeting in Chicago on the same date.

PERSONALS.

G. BULLER COLTHURST, Architect, has withdrawn from the existing partnership of the firm of Nichols, Sheppard & Colthurst, and has opened an office for the practice of architecture at 32 Sandwich Street W., Windsor, Ontario. A. C. FEHLOW, Architect, has removed his office from 7643 Stewart Avenue to 5637 South Justine Street, Chicago, Ill.

GEORGE F. ROOT, 3RD, has opened offices for the general practice of architecture at 280 Madison Avenue, New York City.

JOHN SCOTT & Co., Architects, have removed their offices from 2326 to 2316 Dime Bank Building, Detroit, Mich.

C. KENNETH BELL, Architect, is now located at 2316 Dime Bank Building, Detroit, Mich.

SMITH, HINCHMAN AND GRYLLS, Architects and Engineers, have removed their offices from the Washington Arcade Building to the eighth floor of the Marquette Building, 243 Congress St., Detroit, Mich.

LESLIE A. LIBBY, Architect, formerly of Lancaster & Libby, has removed his office to Falmouth Gardens, Portland, Maine.

The cartoons shown below were made by Mr. Meyer of Meyer & Mathieu, Architects, Brooklyn, N. Y., to use as decorations on the walls of the drafting room. These drawings are about eight inches square and are in ink outline filled in with colored pencil. They are to be framed. The set consists of ten cartoons of which eight are shown here. Caricatures of the members of the firm are seen in the upper corners of this illustration, Mr. Meyer at the left, Mr. Mathieu at the right.



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W. K. HARRISON

W K. HARRISON, winner of The Rotch Travelling • Scholarship, was born in Worcester, Mass. He received his preliminary education in the public schools of Worcester and in the high school in that city. He worked two years in the office of Frost & Chamberlain, Architects, Worcester. In 1915 he entered the office of McKim, Mead & White. He served two years as Lieutenant in charge of a sub-chaser in the Mediterranean and Adriatic Seas. After the Armistice he served as an American Representative on the Disarmament Commission in Austria. Returning, Mr. Harrison spent another year with McKim, Mead & White.

He then went to Paris, and entered the Ecole des Beaux Arts, studying in the Atelier Umbdenstock. Returning to this country, he became connected with the office of Bertram Grosvenor Goodhue, where he is still employed.

Mr. Harrison considers that he owes much to Mr. Corbett in whose Atelier he studied during the time he was employed by McKim, Mead & White.

THE program of the Arthur Gillender Lectures at the Metropolitan Museum of Art is as follows: Design—Its Application, by Walter Sargent, of Chicago University, November 26; Design in Architecture, by A. D. F. Hamlin, of Columbia University, December 3; Design in Painting, by Edith R. Abbot, of the Metropolitan Museum of Art, December 10; Design in Objects of Daily Life, Huger Elliott, of the School of Industrial Art, Philadelphia, December 17; Interior Decoration in Italy, by Charles R. Richards, of Cooper Union, December 31; Interior Decoration in France, by William M. Odom, of the New York School of Fine and Applied Art, January 7; Interior Decoration in England, by Francis Lenygon, January 14; Interior Decoration in America, by Fiske Kimball, of the University of Virginia.

TO FILL vacancies on the Board of Directors of the Illinois Society of Architects the following were recently elected: J. C. Llewellyn, to serve two years as successor to George Beaumont, deceased; Perry W. Swern, for a period of three years to succeed John A. Nyden, resigned; Leon E. Stanhope, to serve for one year to succeed Chas. H. Hammond, resigned.

ARCHITECTURAL DETAIL, PART XVIII.

(Continued from page 29)

white enamel, with a gray tooled joint. Notice the spots punched into the intersections of certain joints to accentuate the pattern.

No comment is needed about Nos. 14 and 15, on page 30. These effects are wonderfully beautiful. The half inch light yellowish gray raked joint with grit in the mortar like that of No. 14 seems to be the most effective.

On page 27 is some interesting pattern work, the elevation of the Town Hall of Clinton, Mass., Peabody and Stearns, Architects. The brick of the wall body are $2\frac{1}{2}$ inch by 12 inch by 4 inch, brownish gray, all the brick being of the gray group. The joint is gray, $\frac{5}{8}$ of an inch wide, tooled smooth. The basket pattern is that used in the Colombier at Boos, France. Notice the differences of projection of the bands around the windows and of the panels under the windows.

The mantel shown on page 29, is from the Gainsborough Studio Building, 222 West 59th Street, New York, C. W. Buckham, Architect. The basket bond of the Colombier at Boos, appears again with excellent effect. The joint is white and 1 inch wide, rough cut, and the brick tiles are 6 inch by 6 inch, the brick themselves being really tiles 2 inch thick. The colors are red, brown, copper and blue. The faience picture tile makes an attractive point of interest and in its special characteristics appears to have been selected with excellent judgment.

The deductions we have just made apply to all of the rougher types of brick, heavy rain-washed, rug mixture, tapestry and their kindred, as much as do those of the installment of this article in an earlier number about color harmonies. An interesting brick of this class with characteristics that differ somewhat from those of the more generally known makes is shown on the upper part of page 29. The detail is from the Draper House at Hopdale, Mass., Bigelow and Wadsworth, Architects. Close scrutiny of the reproduction will disclose a marked difference between individual brick, entirely unmechanical and without repetition. This is obtained by mixing ground brick-bats and clinkers known as grog into the clay, which drops from the pug mill into the brick machine and out through a special die. The clay bar comes out endwise on what will become the flat side of the brick and passes between two vertical wires, taut and tuned so that they vibrate at different pitches under the impact of the grog and thus cause the varying textures that make one of the chief beauties of the finished product. The clay bar continues on to the cutter and then the brick are run onto the off-bearing belt where an edger turns them up on edge. This last operation through the weight of the brick, presses the under face slightly and by laying the finished bricks partly with the rough and partly with the smoother face out, the texture contrast in the wall is increased. These brick are stacked for burning without special care, which brings about some distortion in their shape and breaks along the edges. By a special process the brick in the hotter parts of the kiln, under a temperature as high as 2600 degrees Fahrenheit are flashed with a perfectly mat or unglazed surface. The total range of color is broad and harmonious.

In the detail shown these brick have been laid up with a pressed-in joint and the patterns between the timber work are varied and interesting. Personally I should prefer a slightly raked joint giving more crispness. In passing, it is worth while to notice the adzing of the timbers, rough enough to be in keeping with the brick texture yet not forced or theatrical.

With this we are going to leave the interesting domain of texture and turn to that of moulded and sculptured ornament. Although a good deal has been said on that subject in the last fifty years, there are still some points that may be accentuated and some new drawings that will doubtless interest the readers of PENCIL POINTS.

THE Iowa Chapter of the American Institute of Architects will hold its annual convention in Chicago on October 23 and 24. October 24 is the date of the regular meeting of the Illinois Society of Architects.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION

PART VII.

BY OTTO GAERTNER.

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Squash Court Construction (Continued)—All the necessary condensation gutters and outlets should be provided, and the steel core bars should be painted with black asphaltum before being covered with galvanized iron or copper. The skylight should be protected by heavy wire mesh screens below, unless it has wired glass and is so high above the playing height that the balls will not reach it. The local laws and ordinances may require that it be protected by such a screen above also. There should be a ridge or other type of ventilator on the ridge of the skylight if no ventilating sashes are provided. If there is to be no skylight, or other ventilation, a large ventilator of an approved type should be placed in the ceiling, so located that a good circulation of air is assured, its location being dictated by the source of the fresh air supply, which as already mentioned is generally in the tell-tale. Some scheme of controlling dampers or other regulators should be installed to control the ridge and roof vents, and they should be wired to prevent birds from entering. A fine wire mesh, accessible for cleaning, may be needed to guard against snow if they are in an exposed position.

A room should be provided adjoining the rear wall of the court, with steps leading to a portion of the upper part of the room which forms a spectators' gallery. If the court is provided with such a gallery, a sill is placed on the rear wall at a height of nine to ten and one-half feet above the floor of the squash tennis court and at a height of eight feet above the floor of the squash racquet court. In the former the sill is made to match the woodwork of the court, while in the latter a plate of dressed spruce about three inches thick and about eight inches wide can be used to form a sill and nosing. The depth and height of the gallery, the seating, etc., must be arranged to suit the height of the room and all the other conditions involved in each particular case. Care must be taken to allow for the necessary headroom at the door to the court; otherwise the gallery floor may be made as low as possible consistent with the level of the sill as determined by the heights given above. In the racquet court, the gallery sill is very close to the gallery floor so that a railing with a top rail, intermediate rail, and standards must be placed upon it. This railing is made of galvanized steel pipe having an inside diameter of one and one-half inches, together with all the necessary galvanized flanges, beadless fittings, sockets, etc., rigidly set in place. The railing is three feet high including the top rail, and the standards are placed not over three feet apart. To protect the spectators from the balls, a stout woven rope guard is placed in the space between the floor, ceiling, and the side walls, suitably framed and fastened on all sides. Sash cord woven and knotted in such a way that the cord can not slide and let the balls pass through the openings, is sometimes used, the mesh being not over one and one-half inches.

Heating need not be provided in the court, but the adjoining spaces may be heated so that the chill can readily be removed from the court by leaving the door open for a short time. The same applies to the spectators' gallery. If desired, some method of indirect heating and ventilating may be installed, but a warm court is not desirable.

If there are several courts adjoining each other, the upper parts of the dividing walls above the wall heights already given, namely, sixteen, twelve, and eight feet respectively for the play wall, side walls, and rear wall of the cement lined racquet court, and fourteen, twelve, and nine to ten and one-half feet respectively for the same walls of the wood lined tennis court, may be of heavy wire mesh. This also applies to walls other than dividing walls of the courts if there is a passage or other suitable space on the other side. Enough of the wall surface, however,

should be carried up to the ceiling to give the walls and other parts of the structure the necessary rigidity, or steel channel and tee-iron framing should be used, assuming that roof supports are already provided. Such screens will increase the circulation of the air, diminish the echoes, and help to give the court a feeling of spaciousness. It is well to erect this wire mesh in units of from four to six feet in width. The wire of the mesh should be galvanized number 10 United States standard gauge, woven into square or diagonal mesh, three-quarters of an inch or one inch spacing, set into frames of one inch galvanized steel channels and clinched. The frames are then set into the openings provided for them, or they are fastened to the channel and tee-iron construction.

If any of the court walls are outside walls they may be provided with windows outside of wire screens placed as mentioned above. In this case, the screens are absolutely necessary to guard the windows from being broken and since the thickness of the wall does not permit the windows to open inward on account of the screens, they must be made stationary or preferably either double hung or to open outward in which case they must be operated from the outside. It is not advisable to place windows in the playing walls even if their heights to the ceilings permit, as the glare into the players' eyes may at times be too intense.

The finished surfaces of the courts are treated as best suits the materials of which they are constructed. The wood lined courts are sometimes finished natural but generally they are stained a light suitable color, after which, they are given three coats of the best white shellac, the first two being lightly sandpapered and rubbed smooth whereas the final coat is especially rubbed with fine steel wool or other suitable rubbing material. Some people prefer to use a hard varnish for the finishing coats, in which case one coat of the shellac and two coats of varnish are applied.

The cement courts are usually given an enamel finish. For this, two coats of white lead and zinc paint and three coats of a good brand of enamel are applied, each coat being allowed to dry thoroughly before it is lightly sanded and rubbed to an even smooth surface ready to receive the succeeding coat. The final coat is given a flat finish by rubbing it with finely powdered pumice stone and oil. The cement floors are treated the same as are the cement walls but sometimes for economy they are painted with two or three coats of prepared cement paint. It is well to delay the painting of the cement walls and floors for six months or a year after the completion of the court. This gives them time to dry out thoroughly and allows time for any imperfections due to settlement or shrinkage to appear so that they may be repaired before the court is finished, thereby not necessitating a second finishing a short time after the first.

The play lines of the wood courts, if not made by an inlay of differently colored wood from that of the walls as already suggested, must be stained or painted on before the finishing coats are applied. In the cement courts they are painted on with enamel. The play lines are usually one and three quarters of an inch wide and are generally placed twelve feet above the finished floor on the side walls and six feet above the finished floor on the two end walls. The tell-tale is generally painted with one or two coats of red lead and oil paint and then finished with two coats of colored white lead and oil paint or with enamel as specified above for the cement walls. The colors of the ceilings, window frames and sashes, wire screens, skylights, et caetera, may be any that are suitable, but those of the walls, floors, tell-tale and play lines should have special consideration and it is well to consult with the owner before the final selection is made. In the wood finished courts, the floors and walls are often the natural color of the wood and often they are a light brown or mahogany color. In the cement courts the floors are often a light gray and while the walls are often white a light cream color that is almost white but is not so glaring, is preferable. The color for the tell-tale, though sometimes black, is generally light green. The play lines are also generally light green. But, in any event, all colors should be such as will contrast with the colors of the balls. Individual players sometimes prefer some colors to others for this reason.

PENCIL POINTS

The door leading into the court is colored and finished on the court side to match the walls. The materials and finishing of the ceilings, window frames and sashes, skylights and wire screens may be such as are generally specified in good work.

There are innumerable methods for finishing the courts above the playing heights and any number of designs using face brick, tile, stucco, et caetera, can be worked out to suit the owner's fancy. Usually, however, the utilitarian and not the aesthetic aspect dominates the situation and the courts are finished in the plainest and most substantial method which is generally also the most economical.

MOTION PICTURE THEATRE DATA, PART IV.

(Continued from page 34)

as they say these walls cannot be seen, but I know of no house of any size or importance where the lighting effects fail to disclose even the minutest details.

It will be noted in the illustration of the Capitol Theatre, Detroit, that instead of an architectural colonnade, the side walls have been treated with silk panels and that the stage box portion and the sounding board have been carried out to a greater distance than in any of the other theatres. This was done for the purpose of bringing the front of the theatre to the people in the balcony as much as possible, in this way avoiding the necessity for any additional treatment. It will be noted that the ceiling pattern is carried right in with the sounding board, whereas in the Capitol Theatre, New York, the dome and the colonnade were particularly designed for the balcony.

Side aisles along the walls of the balcony should be avoided and, where the plan permits, the best arrangement is to have five seats along the walls, then the aisle and the banks of seats of thirteen and fourteen as permitted by the building ordinances. This will also permit the vomitory passages to come along the side walls which is a more desirable arrangement as the tendency of the people is to sit in the centre of the balcony and, if a vomitory passage is placed in the centre or directly off the centre, the people occupying seats are annoyed by the continual passing of patrons through their line of sight during the performance. If the vomitory passages are placed at the sides, only those seated along the side walls will have their view of the screen obstructed by people passing and even this annoyance can be minimized by proper handling of the people. It is, of course, not within the province of the architect to dictate the distribution and the handling of the people in order to meet the requirements of the plan, but I have noticed that in theatres where the seats are placed along the side walls and the patrons are permitted to enter the balcony from the first cross aisle, these seats are made undesirable, but if the people entering the balcony were handled from the second cross aisle and forced to walk down to the higher priced section or walk up to the lower priced section, this annoyance would be largely overcome. It is, therefore, not necessary to give any great weight to this permanent defect.

As a rule, it is very hard to seat people in the orchestra floor along the side walls as these are considered the worst seats in the theatre, but several theatres, such as the Capitol Theatre, New York, have overcome this difficulty by placing boxes along the side walls adjoining the aisle, and furnishing them with very large, comfortable chairs handsomely upholstered. By making this change these seats have come to be considered by many patrons the most desirable in the house. This is a very satisfactory solution of a difficult problem and should be employed in any house over one hundred feet wide.

THE co-operation of Harvard University, The Massachusetts Institute of Technology, and the Atelier of the Boston Architectural Club in furthering professional education among the men employed in the offices of Boston architects, together with the interest shown by the architects in this movement sets an excellent example.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Atlantic Terra Cotta—Monthly magazine each issue illustrating an important old Italian building. Issues covering the following are available to architects and draftsmen—The Ospedale Maggiore, Milan; The Certosa of Pavia; Chiesa del Corpus Domini, Bologna; The Palazzo Comunale and Palazzo Stanga, Cremona, and the Pazzi Chapel, Florence. The della Robbias will be treated in issues soon to be published. Applications to be placed on mailing list should be sent to the Atlantic Terra Cotta Co., 350 Madison Ave., New York.

Southern Pine—What it is, what it is used for. Handsomely illustrated Brochure discussing the pines of the south, their properties and uses. 32 pp. Southern Pine Association, New Orleans, La.

Corrugated Wire Glass—Illustrated technical bulletin No. 8 covering the application of wire glass in various types of construction. 20 full page drawings of details with specification data. 8½ x 11. 44 pp. Pennsylvania Wire Glass Co., Pennsylvania Bldg., Philadelphia, Pa.

Corcoran Tanks—Illustrated catalog of tanks for all uses, towers, windmills and accessories. Tables of dimensions, capacities, etc. with typical installations. 24 pp. 7½ x 11. A. J. Corcoran, Inc., 756 Jersey Ave., Jersey City, N. J.

Modern School Lighting—Technical treatise on the subject. Tables, reflection factor of colored surfaces and other engineering data useful to the architect. 6 x 9. 36 pp. Holophane Glass Co., 342 Madison Ave., New York.

Lunken Window Portfolio—A portfolio designed especially for the architect, draftsman and specification writer. Data with typical installation details of both light and heavy construction including full size blue prints. Special treatise on windows for hospitals. 8½ x 11. The Lunken Window Co., Architectural Dept., Cincinnati, Ohio.

Ash Removal—Booklet No. 190 showing results of tests of equipment for removing large quantities of ashes and handling other loads between floors. 6 x 9. Gillis & Geoghegan, 548 West Broadway, New York.

Chains—Catalog No. 11 covering sash and other chain used in building construction, together with padlocks and a variety of other specialties. Smith & Egge Mfg. Co., Bridgeport, Conn.

Hand Power Elevators and Dumb Waiters—Catalog O. Complete line of hand operated equipment for vertical conveying. Dumbwaiters, elevators, invalid lifts, automobile elevators, sidewalk lifts, etc. Data for specifications. 52 pp. 4½ x 8. Sedgwick Machine Works, 158 West 15th Street, New York.

French Drawing Papers—Price list with descriptions of various papers suitable for all uses. Canson & Montgolfier, 461 8th Ave., New York.

Mueller Tile—Illustrated Brochure of faience and Flemish Tile. Fire Places, swimming pools and many exterior applications. 6 x 9. 36 pp. Mueller Mosaic Company, Trenton, N. J.

Brixment—What it is, what it does, how it does it and why. Booklet illustrated in color telling all about Brixment mortar. Louisville Cement Co., Speed Building, Louisville, Ky.

Residence Lighting Fixtures—Brochure illustrated by 40 full page drawings showing lighting fixtures suitable for all types of residence. 8 x 11. St. Louis Brass Mfg. Co., St. Louis, Mo.

Loomis-Manning Filters—Booklet covering subject of water filtration showing various types of equipment suitable for different sizes and types of buildings. 5½ x 8. 24 pp. Loomis-Manning Filter Distributing Co., 1421 South 37th St., Philadelphia, Pa.

Monarch Metal Weather Strips—Technical bulletin covering the subject. Sectional drawings. Full specification data. 50 pp. 7½ x 10½. Monarch Metal Products Co., 5020 Penrose Street, St. Louis, Mo.

The Right Angle—Small house number. Specifications for applying stucco, sectional drawings, etc. 8½ x 11. 16 pp. General Fireproofing Co., Youngstown, Ohio.

Copper—The Ideal Roof—Brochure by C. Matlack Price. Illustrated by J. M. Rose. An attractive booklet on an important subject. 5 x 7½. 24 pp. Copper and Brass Research Association, 25 Broadway, New York.

Telesco Partition—Loose leaf booklet showing various types of partitions suitable for office, bank and other types of buildings. Detail drawings. 8½ x 11. 16 pp. Improved Office Partition Co., Elmhurst, N. Y.

Indiana Limestone—Portfolio containing material of interest to architects and draftsmen. Standard specifications for cut Indiana Limestone work, designs for houses of Indiana Limestone and a series of detail sheets showing various types of construction. Indiana Limestone Quarrymen's Assn., Architects' Service Dept., P. O. Box 784, Bedford, Ind.

QUERIES

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, Metropolitan Tower, New York City.

Question—I wish to buy a copy of "Geymuller." Have you any information that will assist me in obtaining this book? R. B. **Answer**—It seems to be quite impossible to secure a copy of "Geymuller," we understand that as much as \$1,000 was offered for a copy this summer without result.

Question—Will you please recommend some good books on Gothic architecture? H. H. **Answer**—We would suggest the following: "English Church Architecture," Francis Bond-Milford, Publishers; "Mediaeval Figure Sculpture in England," Prior & Gardner, published by Cambridge University Press; "Study Book of Mediaeval Art"; "Monuments Historique"; "Les Cathedrales de France," Baudot-Henri Laures & Dabot, publishers; "Farm Houses, Manor Houses of France," R. A. Cram; "Gothic Architecture," Sir T. G. Jackson, published by Cambridge University Press; "Mediaeval Architecture," Kingsley Porter, published by Baker & Taylor Co.; "Spain," Calvert, published by John Lane.

Question—Please let me have the names of some books useful to a commercial artist. M. S. M. **Answer**—We would suggest that you examine "What Every Advertising Artist Should Know," and "Art in Advertising."

COMPETITION FOR THE DESIGN OF A SMALL HOSPITAL

A COMPETITION for the design of a small hospital is announced by The Modern Hospital Publishing Co., Inc. The first prize is \$500, second prize \$300, third prize \$200. There will be two honorable mentions. Richard E. Schmidt of Schmidt, Garden & Martin is the architectural advisor. The final date for submitting designs is January 15, 1923. Requests for full particulars and program should be addressed to The Modern Hospital Publishing Co., Inc., 22 East Ontario St., Chicago, Ill.

ST. LOUIS ARCHITECTURAL CLUB.

THE St. Louis Architectural Club has offered a prize of one hundred fifty dollars to be awarded for the most meritorious work done in the Summer Sketch Class. The judgment is to be made on the basis of quality of work, versatility of treatment and degree of progress made during the course. The prize is to be used toward defraying the expenses of a two weeks' sketching trip to some architecturally interesting locality. The members of the jury of award are: Prof. Paul Valenti, Instructor of the Sketch Class; Prof. Gabriel Ferrand; Mr. Louis La Beaume; Mr. Angelo B. M. Corrubia; Mr. Hugo K. Graf.

Evening courses in architecture will be conducted jointly by Washington University and the St. Louis Architectural Club, beginning October 5 at the Club House. A life class will be held at the Club every Monday evening.

The Opening Reception and Exhibition of the Club is set for Thursday evening, September 21. Architectural drawings by St. Louis architects and sketches by students of the Sketch Club Class will be on exhibition.

The Club quarters have been re-decorated during the summer.

THE STUDY OF ARCHITECTURAL DESIGN.

(Continued from page 13)

In Figure 100 (Oct. 1921) we see in the plan for a State Historical Society a successful handling of the question of entourage for a small building; Figure 113 (Dec. 1921) is also a simple and direct treatment, though quite formal in its lines.

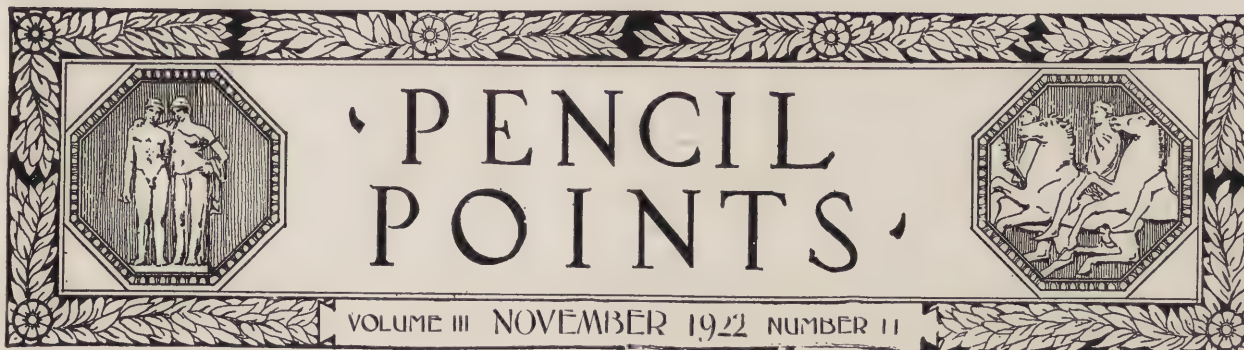
Even where a building occupies most of the lot, the arrangement of what is left should be carefully studied. Figure 173 is such a plan—there is only a small strip of ground left at the sides: in this case, this is well handled. The treatment in Figure 102 (Oct. 1921) of the plan of the small art museum is also happy: it is in such a case, where the building takes up almost all the lot, leaving unsymmetrical spaces here and there, that one realizes the value of giving a thought to the entourage early in the study of a problem.

But the entourage is not necessarily formal; Figure 97 (Oct. 1921) shows a particularly satisfactory arrangement of formal lines, but very simple in detail, befitting the subject of the program. An extreme example of simplicity of entourage is shown in Figure 174 where in the plan for a small dairy farm the rectangular cow yard ties the buildings together, and a road parallels the long axis of the group. This extremely simple plan, quite appropriate to the program, would seem ugly if poorly presented, even granted it would look well built. The texture given to the grass just above and at the sides of the buildings is of more use than one would at first suppose. Figure 116 (Dec. 1921) is another sort of simplicity—a utilitarian variety.

Simplicity depends after all on the character and scale of the problem. From this point of view, in a plan, a hedge or a stone wall may be represented by one line, or by two lines, or three, or four lines or more, depending on the effect necessary. Any of these could represent a possible stone wall, or hedge. The important thing is to express scale and get an effect.

There is also the question of entourage in elevation. This being more pictorial, less conventionalized, is more generally understood. One should not forget, however that the elevation itself is a conventional drawing and that the arrangement of setting should not be too naturalistic, for that reason, except for small structures, or garden buildings, as in the "spring house" of Figure 99 (Oct. 1921), and then *only if well done*. A real study has to be made of the setting of trees and foregrounds. It cannot be done at the last moment, and it should not be "too clever." If a drawing has such an appearance; the involuntary reaction of a jury is immediately to hunt for flaws, and if they are found, the penalty is the more severe because time has been spent on "cleverness" that was needed in further study of the architecture.

One hint may be of value. If the lines of a building are stiff, and the program is not one requiring formality in character, it is sometimes well to break these lines, in presentation, by means of some planting, as in Figures 175 and 176 or by a shadow on the foreground, shown fore shortened.



A MESSAGE FROM GROMORT

THE fact that M. Georges Gromort's book on Italian Renaissance architecture has now been translated into English impels us to devote this page to an appreciation of his work, in the belief that calling the attention of our readers to the translation is the best use we can make of the space usually devoted to an editorial.

This book contains a vitalizing message for the architect and the architectural student. It stirs one and gives greater power. It deepens, organizes and clarifies one's understanding of the meaning of architecture. If reading it does not make a man a better architect, we believe he must be either perfect or hopeless.

This book is much broader than its title "Italian Renaissance Architecture." While discussing the Renaissance the author makes clear the reasons for the general excellence of the work of the period under consideration and since these reasons are basic, points the way to the creation of architecture of the highest character today—not necessarily in the Renaissance manner.

M. Gromort is peculiarly well fitted to stimulate an appreciative interest in the spirit of architectural works. This sets his book apart from other scholarly, historical and descriptive works, and gives it special value.

There is somehow the quality of a spoken message from the author to each reader. This is so, perhaps, because M. Gromort prepared this work for his own pupils, men he knew and talked to. The translator, Mr. George Waters, himself an able artist, has preserved this quality while sympathetically turning into English M. Gromort's text.

As indicating the author's approach to his subject, we give below two quotations from the book. In speaking of the exaltation of personality which was one of the characteristics of the Renaissance period he says: "If one of the faults of our time, as Stendhal so bitterly complained, is an unfortunate propensity to disguise the tendencies and the passions which form the depth of our nature and constitute the only elements worthy of characterizing us, the men of the Renaissance on the contrary never hesitated to give free rein to these propensities, good or bad as they might be, and to cultivate carefully those likely to distinguish them from their neighbors. We do not have to inquire what such a conception is worth from a philosophical point of view;

it is possible that sometimes it provoked men to debauchery and crime, but it is not to be doubted that, in developing sensibility, it produced very great artists. On the other hand it exalted good instincts to the same extent as evil ones, and it is probable that peoples, like works and individuals, are worth much more possessing a few qualities than lacking any defects."

Speaking of the charm possessed by many Renaissance buildings he says, in part: "From the three marble steps by which one reaches the portico of the Libreria Vecchia to the topmost mouldings of the balustrade which crowns its brilliant cornice, there is not a line, not a detail of ornament the study of which seemed less useful, or rather less *amusing*, to the artist than any other. . . . The architectural details have been studied, caressed, we might say, with the same loving conscientiousness of which we spoke a moment ago. Quite a spontaneous conscientiousness, however, and one that we are hardly called upon to credit the artist with. He was *amusing himself*, and there does not seem to be very great merit in that. How could works of art conceived with such fervor and executed from beginning to end with so much delight be really tedious? Did their authors really possess so little happiness, or rather so little common ability? The least particle of talent, backed up by such a way of working, ought to produce interesting things: what if these methods are placed at the service of genius?"

M. Gromort classifies the Renaissance works of architecture in three divisions, marking the periods of development, and he discusses each period in a way that is illuminating and intensely interesting. The book contains one hundred ten photographs and measured drawings, also forty-five illustrations in the text and a folding chronological chart of the principal Renaissance buildings.

THE SKETCH COMPETITION

AS THIS issue goes to press we are able to say that the Birch Burdette Long Sketch Competition for 1922, judging by the number of entries, will be as great a success as the competition held last year. The judgment will take place shortly at the headquarters of the Architectural League of New York where a selection of the drawings will be exhibited for one week. A travelling exhibition of sketches will then be sent on the road.



Rendering by Otto R. Eggers, Drawn in Pencil with Light Washes of Color. For Description of the Making of This Drawing See Mr. Eggers's Article Beginning on the Opposite Page.

THE GENESIS OF A RENDERING

BY OTTO R. EGGERS

In this article Mr. Eggers describes in detail the way in which he made one of his renderings, covering every step from the first conference with the client to the completion of the drawing, illustrating his method of working by a concrete example and making helpful comments as he proceeds.—ED.

THE drawing reproduced on the opposite page was made for the double purpose of studying the design and of showing the idea to the client. The first step was, naturally, to learn the client's requirements. In this instance this was rather easy, for she had spent much time in France, had a house in a suburb of Paris in fact, and showed a decided preference for the chateau type. The idea was crystallized by going over a number of books with the client, noting the characteristics of the old chateaux that especially appealed to her. The site, a strip of comparatively level land along a river, was of the kind into which a house of this character would fit very well. The slight slope of the ground was eliminated before the completion of the work. As the approach was to be from the higher ground on the side opposite to the river front, the first view of the house would be in the nature of a bird's-eye view. Under these circumstances, it was apparent that steep roofs would be desirable—the kind of roofs that one can play with.

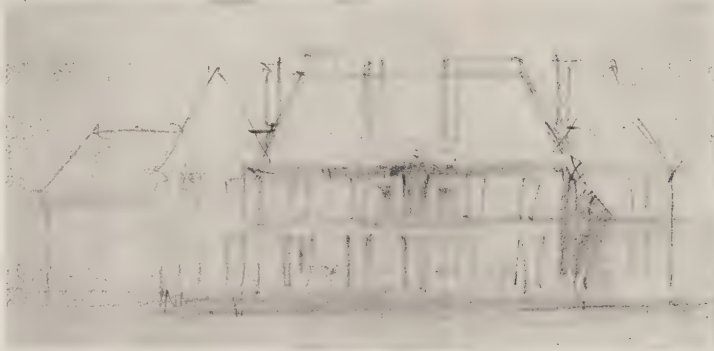
Rough free-hand studies of the plan were made,

always keeping in mind the exterior. The size of the various rooms were more or less predetermined. Incidentally, it may be said that the ceilings were to be high and the interior more formal than the exterior. Next, a sketch plan was drawn with T-square and triangle.

Then rough elevations were sketched, merely studies in mass, made principally to give the silhouette of the roofs. One of these elevation studies is shown on this page. It happens to be of the river front of the house, opposite to that shown in the perspective.

The planting that would be required by the site was then studied in a rough sketch. This planting is shown on a more carefully drawn plot plan which was made at a later stage and is reproduced on page 12, in connection with this article.

The next step was the making of the preliminary drawing that was to serve as a basis for the rendering. This drawing is shown in the illustration at the bottom of this page. It was made practically in elevation in order that the design might be studied the more easily. It is at one-eighth inch scale and was drawn very lightly and indefinitely. A hard

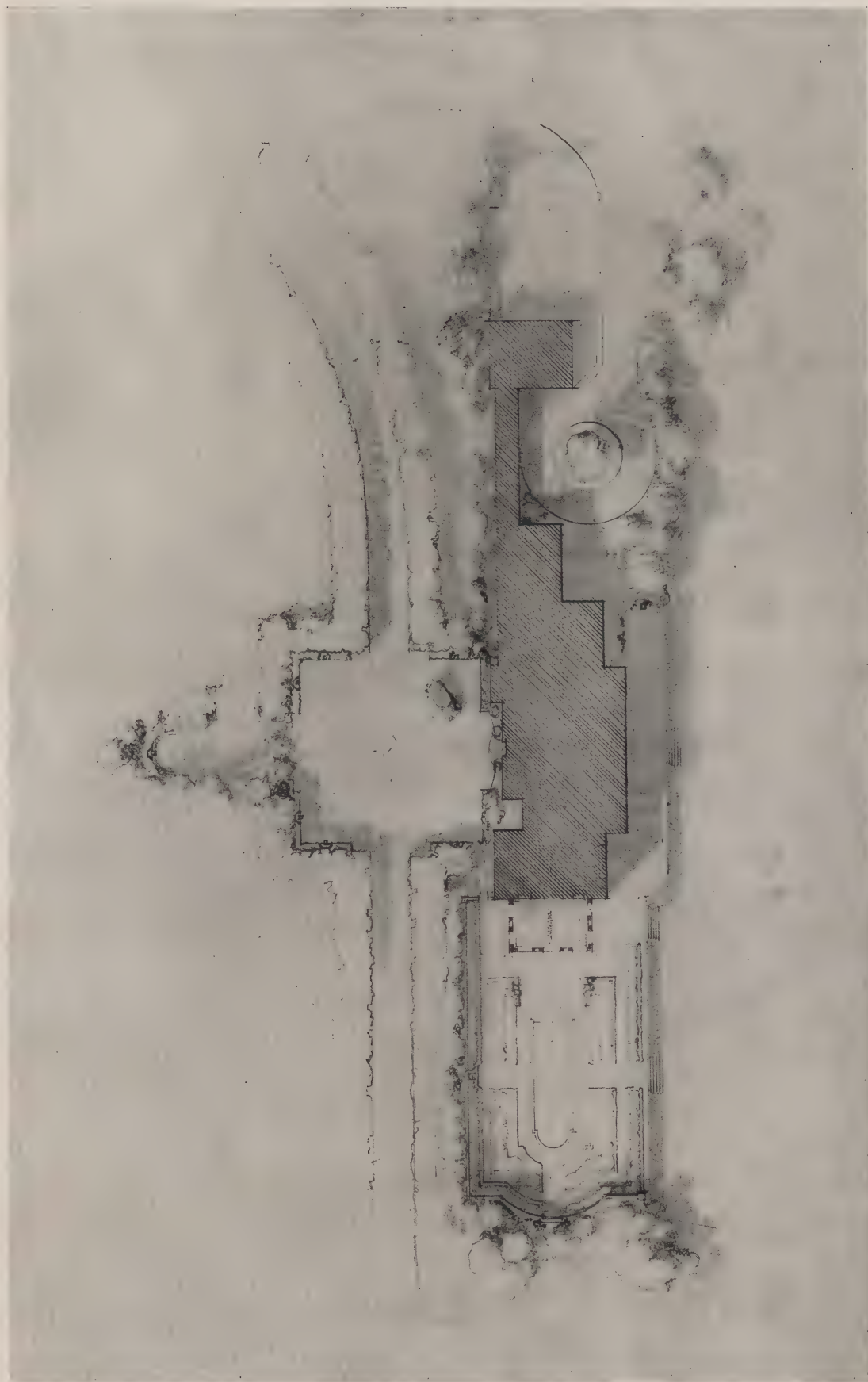


Rough Study of an Elevation.



The Preliminary Drawing Which Was Used as a Basis for the Rendering Shown on the Opposite Page.

PENCIL POINTS



*Pencil Drawing by Otto R. Eggers, Plot Plan Showing Grounds of House Represented in the Rendering on Page 10.
See Text Beginning on Page 11.*

PENCIL POINTS

and very definite drawing makes a bad basis for a rendering for it is difficult to avoid getting the hardness of the preliminary drawing into the finished work. By the way, a professional render who has that kind of drawing given to him, as is often the case, is badly handicapped at the start. There seems to be no way out of that difficulty, however, where the rendering is not to be done by the designer, for one man can hardly be left very much freedom interpreting another's architecture.

In making this preliminary drawing there was no instrumental preparation, in the usual sense. A plan at one-sixteenth inch scale was used for reference only. The widths and heights of the various main parts were simply scaled off and a vanishing point assumed somewhat to the right of the centre. The ridges of the roofs were drawn to this point. The long horizontal elements of the front, eaves, etc., were drawn in with the T-square used as a straight-edge and tilted so as to make the lines converge towards the left. No vanishing point was established at the left, the lines being drawn as seemed about right.

The architecture was studied on this drawing; sizes and widths of openings, etc., a figure of a man being lightly sketched in for reference as to scale. This drawing was left sufficiently indefinite to permit further study in the making of the final sketch.

On this preliminary drawing I roughed in lightly the general position of the planting that would be necessary around the building. I then put a piece of very transparent tracing paper over this drawing and went ahead with the pencil sketch, making it over the preliminary drawing which showed through clearly.

I first consider the scheme of my picture in a general way to decide where the lights and darks are to be placed and their relative intensity. If, as in this case, the drawing is to be mounted on gray cardboard and Chinese white used to bring up the contrasts, I consider where I shall use the white.

I usually start working as near the centre of interest of my picture as I can without the danger of putting my hand into the drawing. To save the rendering I usually draw with a T-square under my hand. My reason for starting near the centre of interest is that in this way I am able to feel the drawing as I proceed. When the main entrance of a building appears in a drawing, it is usually best to make this the centre of interest.

As a rule, if there is any foliage in front of a building, that should be put in first, as one cannot do any rubbing out. Usually, the nearer planes should be drawn first, so that all that goes back of them may take their proper value and position. Each part drawn should be fully rendered before passing on to the next part, with the exception that positive blacks may be put in after the drawing is otherwise completed. In general, it is well to work from the top downward, so roofs are among the first parts drawn in. I hardly ever use a straight-edge in rendering, excepting once in a while to run in a few lines, when I have a long cornice, for instance. If, when shadows are drawn in, the detail

of the surface upon which they are cast does not show sufficiently to give life to the shadows, the indication of this detail may be strengthened.

Where ivy is shown, if it does not come out black enough, it can be strengthened later by making what may, for lack of a better term, be called curly, zigzag little lines, that suggest the leaves.

In drawing trees it seems natural to draw them upward, the way a tree grows. I put in the trunk first and then draw the branches out from it and the smaller branches in turn, indicating the branches only very lightly. I then draw in the foliage and strengthen the parts of the branches that can be seen among the foliage.

Only the general characteristics of different kinds of trees can be preserved, as a rule, in a rendering, the general form and manner of growth, for instance, the very crooked branches of the apple tree and the characteristic shape of its masses of foliage; the pine tree with its mast-like trunk from which horizontal branches radiate at intervals. Some trees have a general cone shape massing, while the elm is well known by its broad-spreading top, etc. The oak is an especially difficult tree to preserve the character of in a rendering.

In drawing shadows in the foreground I keep all the lines horizontal, no vertical lines or slanting lines. Shadows can often well be put in by scratching with the pencil from side to side and smudging with the thumb to pull the whole together. When a shadow has been made in this way a green rubber may be used to make some horizontal light spots that give the effect of sunlight coming down through foliage. Later on one can put a dab of yellow in each of these light spots to carry further the suggestion of sunshine.

In a pencil rendering, I hardly ever indicate clouds. I leave the sky absolutely untouched, because clouds usually compete with the building and unless they are composed and drawn with great care their appearance is not good. There are times, however, when I want clouds in a rendering; then I give them careful study.

In choosing a paper for a rendering I prefer a smooth paper rather than one that has considerable texture, excepting for large renderings. While drawing on thin paper I use a piece of smooth cardboard as a foundation and tack my drawing paper down over it.

When the pencil work was completed, the next step was to mount the drawing by floating it on a cardboard. Floating a thin paper drawing requires some practice. I first turn the drawing face downward on a clean piece of paper. Then I wet it thoroughly with a clean sponge full of water. Next I pour drawing board paste onto it and spread the paste evenly with the wet sponge, being sure that the paste is spread all the way to the edges and that it does not dry anywhere. I then have some one help me by taking up two corners of the drawing while I take up the other two. The drawing is lifted by the corners and turned over so that the paste-covered side is down. It is then let down onto
(Continued on page 35)

PENCIL POINTS

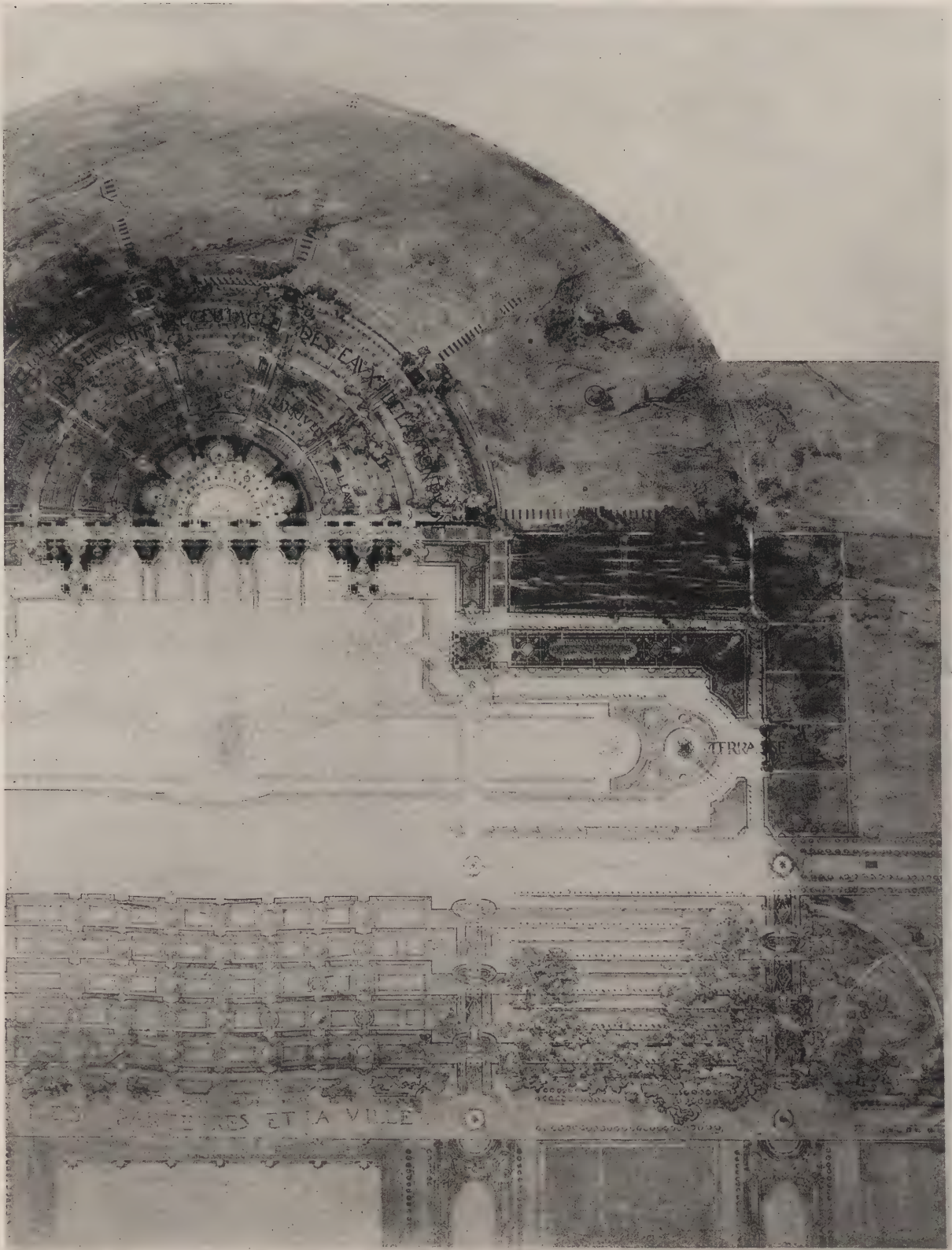


Figure 182. "Un Château d'Eau." Portion of Design by M. Janin, Pupil of M. Laloux. Placed Second, Grand Prix D'Rome, École des Beaux Arts, Paris.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE OF DESIGN

CLASS B. PLAN PROBLEM. PART XI.

Indication

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive.—ED.

AS ARCHITECTS understand it, "indication" may be of three kinds, in each of which the object is to get an "effect"; part of this desired effect is to give an idea of the third dimension as well as the floor area, for instance making thicker the points of poché that support big rooms, as we shall see later. These three kinds are (a) that used in making the esquisse; (b) that used in making studies, for one's own use or to present to the critic, and (c) that used in presentation drawings. Indication as used in the drawing of an "esquisse esquisse" or sketch problem is a mixture of the last two. It will be considered separately.

(a). In an esquisse, a scheme is to be shown, but an indication of detail of any sort is avoided by preference, so that all such questions of detail may be left for study. Thus, in Figure 177, while the big divisions of the building are shown both in plan and elevation, there is no attempt, for instance, either in plan or elevation, to fix the number of windows in the wall which forms one of these divisions: even the



Figure 178. An Example of the Kind of Indication Used in Making a Study.

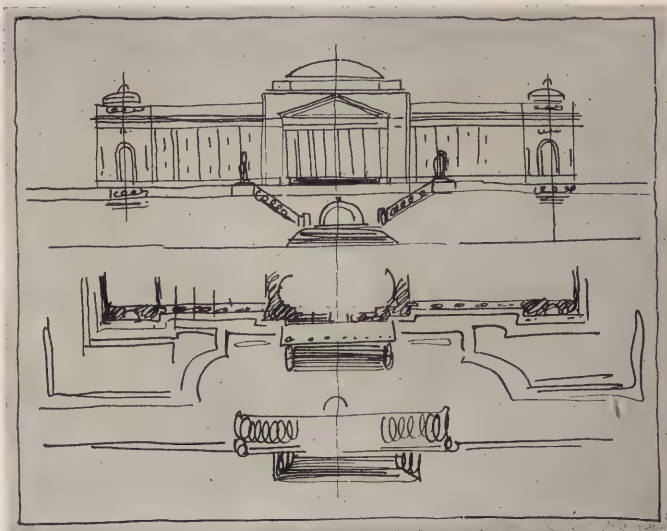


Figure 177. An Example of the Kind of Indication Used in Making an Esquisse.

number of columns in the portico is preferably left to the time when that number may be studied; the crowning feature of the end motif is purposely vague: there will be a mass there that will show in silhouette—that is all that it is desirable to indicate. There is a certain freedom in the drawing of an esquisse: it is not the place to express with definiteness.

(b) In making studies it is needless to say that "indication" is a great time saver. Were time of no value studies might be made by means of carefully drawn and rendered plans and elevations, but where a limited time is given for a problem, (and to prepare for actual practice, where time has a money value) the principal use of indication is to make visible the "scheme" as rapidly as possible, and to confine one's attention to the big principles of design as effecting this scheme, and keep it away from detail. M. Scellier de Gisors, formerly a professor at the Ecole des Beaux Arts in Paris, preferred that all studies of elevation put before him early in the study of a problem should

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*Figure 180. "Les Salles de Fêtes et de Réunion et Les Grandes Serres d'un Jardin d'Acclimatation."
Design by M. Maxime Petit, Pupil of M. Deglane. Achille Leclère Prize, 1912.
Ecole des Beaux Arts, Paris.*

PENCIL POINTS

have all the openings—doors and windows—blackened in solid with ink, which of course will show immediately the proportion between the solids and the voids of a façade, as well as the proportion between the different voids, and these are the first things that must be studied and made satisfactory. He felt that a clever man, one who renders well, frequently deceives himself by making studies in which he has, because he can render well, covered up the faults in his design or taken the attention away from them.

It is for the same reason that most critics ask to be shown in the first few days of study of a problem and at intervals during this study a plan on which all the walls are *poché*—blackened in ink—even if done free-hand with a brush or a stub pen. This will at once show the varying sizes of the rooms, their relation to each other, and which ones are important.

As the studies progress the indication enters more into detail. In free-hand studies of elevation, or studies in which the main lines, the part already determined from previous drawings, are made with T-square and triangle, other parts are done free-hand and largely "indicated." In any study of elevation shadows play an important part: the line of shadow having been cast, the shadow can be most quickly filled in by a vertical free-hand hatching in pencil or by a series of spirals, as in Figure 178, usually smudged with the finger in either case. Openings are merely indicated until some arrangement worthy of more careful study is decided upon. Such details as balusters, column caps, or ornament, are indicated rather than drawn.

Indication in plan is important for its use in study for the same reason—to avoid spending time on detail that should be spent in study of proportion. Compare

Figures 162 and 163 (September). As we have already said, the former gives very well the general effect, yet a comparison of the two immediately shows the difference in time required to get this effect.

(c). Even in the presentation drawings, when an elevation is at small scale, the ornament on mouldings is frequently indicated and not drawn. Unless a drawing is large enough in size to study such detail it makes little difference whether the ornament be egg and dart or tongue and leaf, or something else—a band of gray is the important thing. Bas-reliefs or sculpture may frequently be indicated rather than drawn on such small scale elevations.

In the plan indication is of more importance, because the plan is a conventional drawing, and indication plays a large part in this convention. Indication affects both the "*poché*"—the actual walls of the building—and the "*mosaic*," both inside and outside of these walls. Let us take first the *poché*.

As we have said, the *poché* shows which rooms are important: the big rooms will usually have thicker walls—thicker points of *poché*—because the great spans required to roof them will cause heavy loads on these walls. These rooms too will usually have a richer outline—as the walls may have pilasters, engaged columns, panels, or niches, which would be lacking in corridors or rooms intended for the services of the building. Thus the *poché* will at once give scale and character to a plan. It is interesting to study the Grand Prix plan of Bigot, Figure 179, to see how the character in the three portions of the group—bath house, casino, ball-room—are shown by both *poché* and mosaic.

In examining any plan we see that the walls vary in size—in a big plan, that there is a great variation in

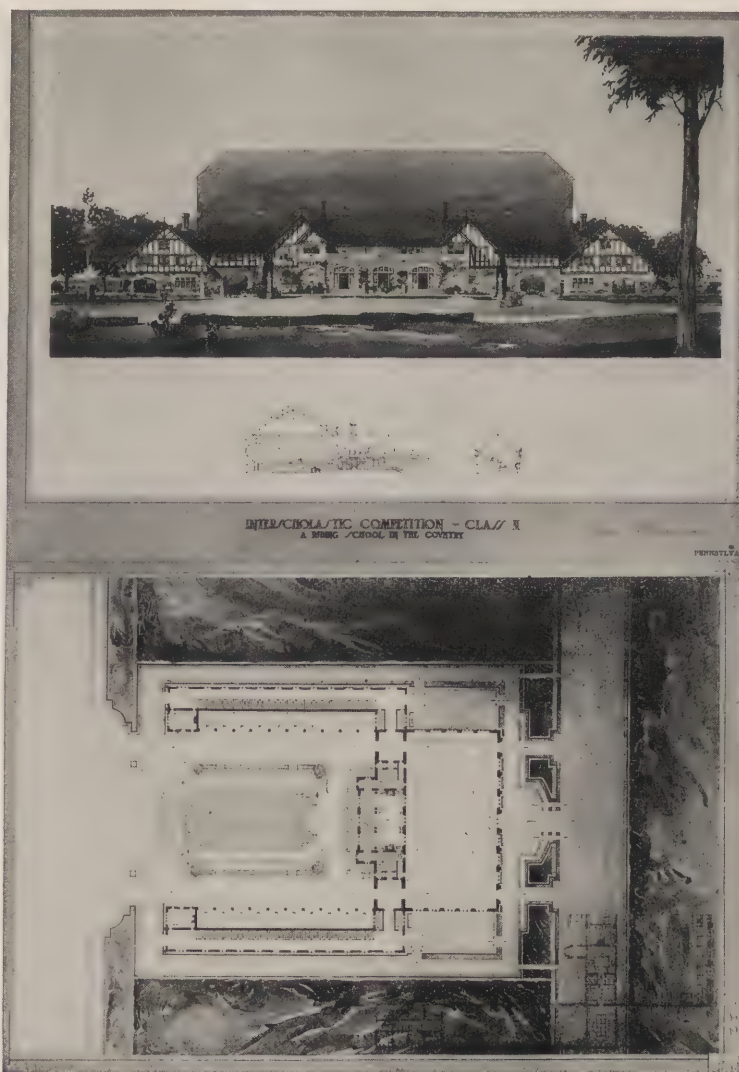


Figure 181. "A Riding School in the Country," by G. E. Brumbaugh, University of Pennsylvania. Honorable Mention in Class B., Interscholastic Competition 1911-12.

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size. They vary in thickness for several reasons. 1. High walls are thicker than low walls built of the same materials. This is the result of constructive necessity, as any building law will show. 2. The larger the room, the thicker will the walls be, if built of the same materials. This again is the result of constructive requirements. 3. A change in the type of construction materially alters the shape and size of the points of poché—vaulted rooms require heavier points of support than flat ceiled ones. Where thrusts occur in construction, either from arches, or from vaults, or from some kinds of trusses, the resultant pressure must be taken care of by means of a thickening of the wall in the direction of the thrust—resulting frequently in buttresses—unless counter-balanced by a corresponding thrust on the other side. If a room has a barrel vault, there will be heavy walls on the sides, and lighter walls, or none at all, on the ends; while a room with a cloister vault will have heavy walls on all

four sides. All these things affect the poché.

4. A change in the material used in construction will, of course, cause a change in the character and weight of the poché. This is especially striking where a building is in part of masonry and in part of steel construction. In Figure 180, a horticultural society's building, note the interesting differentiation between the poché of the rooms of more ordinary size and construction, and the large horticultural hall in front—a sort of monumental greenhouse, where the thin points of support show that the construction is of metal and indicate the large areas of glass. This plan is also interesting for its study in mosaic. Note, too, the character of poché used to express the large central banking room in the Grand Prix plan of Tony Garnier, Figure 9, in Mr. Swales' article in the November 1921 issue of PENCIL POINTS.

The walls of a façade are usually heavier than
(Continued on page 34)

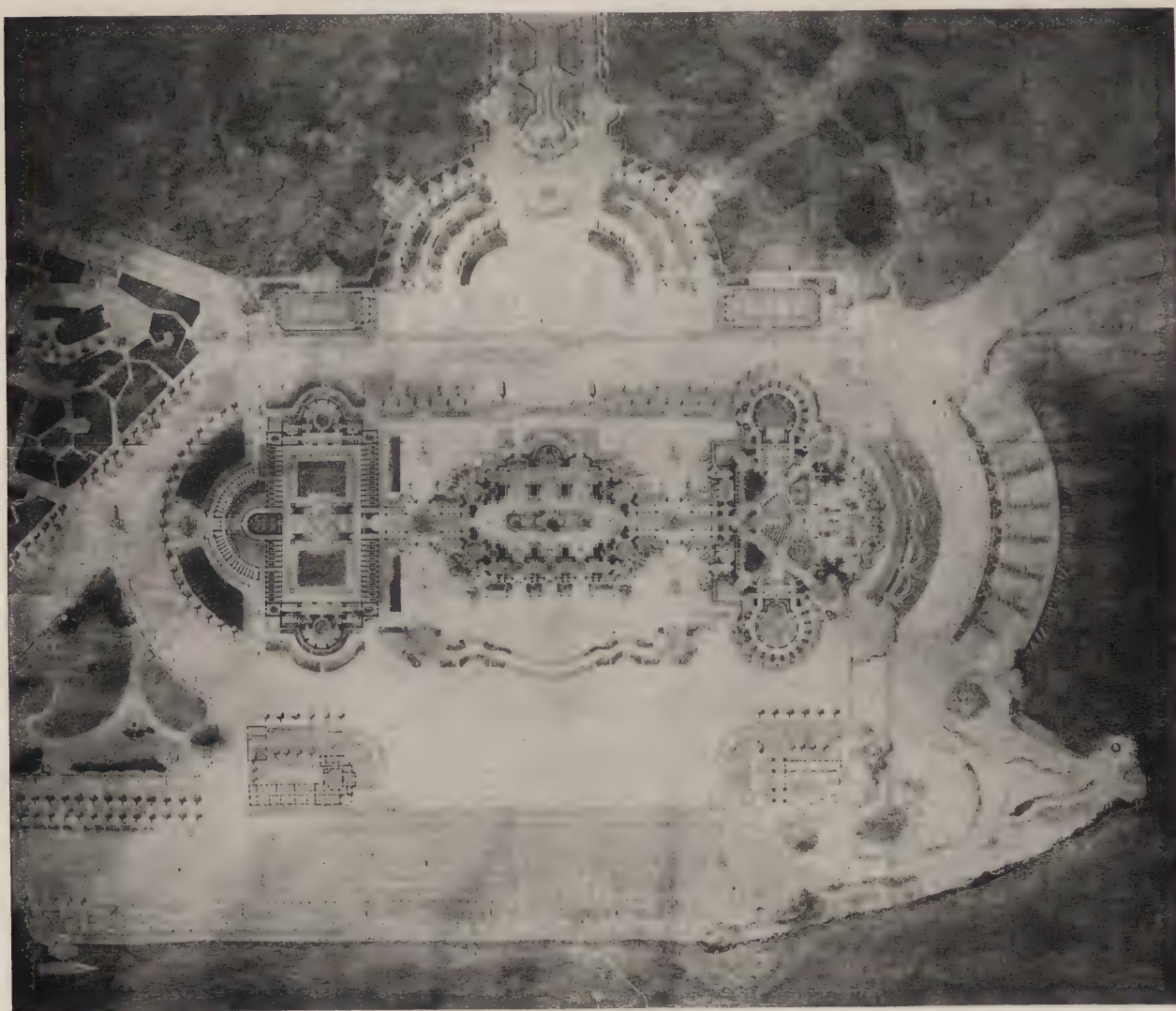


Figure 179. "Un Etablissement d'Eaux Thermales et Casino," by Eugène Bigot, Pupil of M. Laloux. Grand Prix, 1900, Ecole d'Beaux Arts, Paris.

The restoration of the Temple of Venus and Rome reproduced on the other side of this sheet from D'Espouy's "*Fragments D'Architecture Antique*" is a most interesting representation of this very large temple of which remains still exist. This temple was built by Hadrian in 135 A. D. and was reconstructed by Maxentius in 307 A. D. As will be seen by referring to the plan in the corner of the plate, it was divided in two parts. The detail including the lion's head is a portion of the ornament of the cornice.



DOWN-TOWN NEW YORK. PENCIL SKETCH BY VERNON HOWE BAILEY

The sketch of down-town New York by Vernon Howe Bailey which is reproduced on the other side of this sheet is one of the most interesting of this artist's drawings and shows his mastery of technique admirably. It is lithographic pencil on a paper of light ivory tint.



FIGURE STUDY BY KENYON COX

On the other side of this sheet is reproduced one of the remarkably fine pencil studies from life made by the late Kenyon Cox. It is our good fortune to be able to present this drawing through the courtesy of Mrs. Cox.



PENCIL SKETCH, BY KENNETH CONANT. CATHEDRAL AT LUGO, SPAIN, FROM THE TOWN WALL.

One of the many delightful sketches made in Spain by Kenneth Conant in the summer of 1920 is reproduced on the other side of this sheet. It is one of the finest of the series, and conveys the architecture especially well while having excellent pictorial character. Other drawings by Mr. Conant will appear in early issues.

MOTION PICTURE THEATRE DATA, PART V

BY EMIL M. MLINAR.

In this serial article Mr. Mlinar, who is the New York associate of C. Howard Crane, Architect, Detroit, Michigan, is going thoroughly into the practical considerations in motion-picture theatre design, presenting the data indispensable in designing and making drawings for such theatres. Mr. Mlinar specializes in theatre work and was formerly of the office of Thomas W. Lamb.—Ed.

MUCH thought has been expended by architects upon the design of the proscenium, and it is interesting to note here how some architects have treated this feature, especially the big area supporting the sounding board. We, therefore, publish in connection with this article a number of photographs showing the proscenium in various motion picture theatres, including several of the type that is favored by architects on the Coast as well as the kind of treatment generally employed in the East and throughout the country.

In their effort to secure the most effective proscenium treatment architects for some time have endeavored to do away with the customary boxes, which do not permit of the most satisfactory treatment of the pro-

scenium on account of the fact that they project beyond the architectural surface. From the theatre owner's standpoint, however, the boxes are often highly desirable, not only on account of the fact

that they provide additional seating and higher prices than are charged for most other seats, but because when a motion picture theatre is built with boxes it may be more readily turned into a legitimate theatre. Personally, I am in favor of doing away with the proscenium boxes but if they are required they should be given particular study.

One of the most serious mistakes in connection with the designing of the proscenium is to overlook the fact that the people sitting at the side of the house must look through that portion of the auditorium into which the boxes pro-



Mezzanine of Loew's State Theatre, Los Angeles, Cal. Weeks & Day, Architects.



Mezzanine of Loew's State Theatre, Oakland, Cal. Weeks & Day, Architects.

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*Detail of Capitol Theatre, Detroit, Mich.
C. Howard Crane, Architect.*



*Detail of Loew's State Theatre, New York.
Thomas W. Lamb, Architect.*

PENCIL POINTS



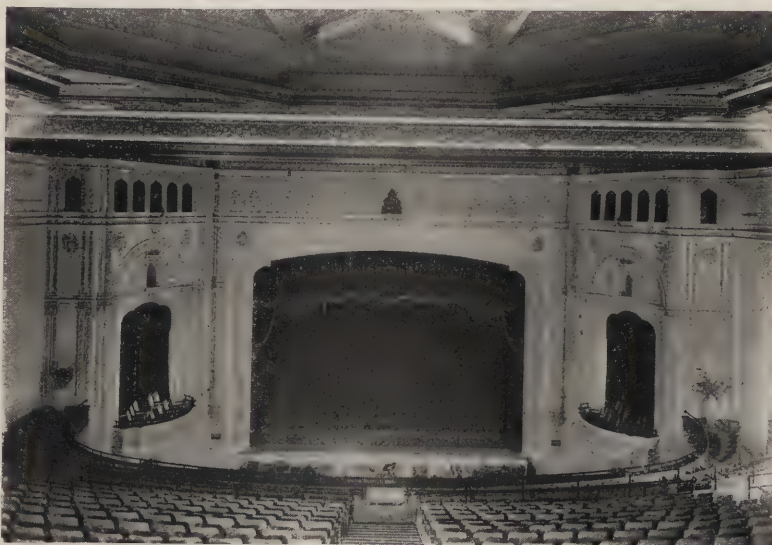
Auditorium of The Capitol Theatre, New York. Thomas W. Lamb, Architect.

ject and in order to overcome the possibility of cutting off the view of the screen from some of the seats the relation of the boxes to the stage must be carefully considered. It will be noted by reference to the illustration of the auditorium of the Capitol Theatre, New York, that the designer has cut down the corner of the box over the lower orchestra boxes so as to avoid cutting into the sight from some of the orchestra seats. Though the value of this box for seating people was not regarded as highly important, it has been so designed that it is entirely satisfactory for use.

Not infrequently in planning a theatre too much is taken for granted as to the placing of the picture screen. It is sometimes assumed that the screen will be placed at

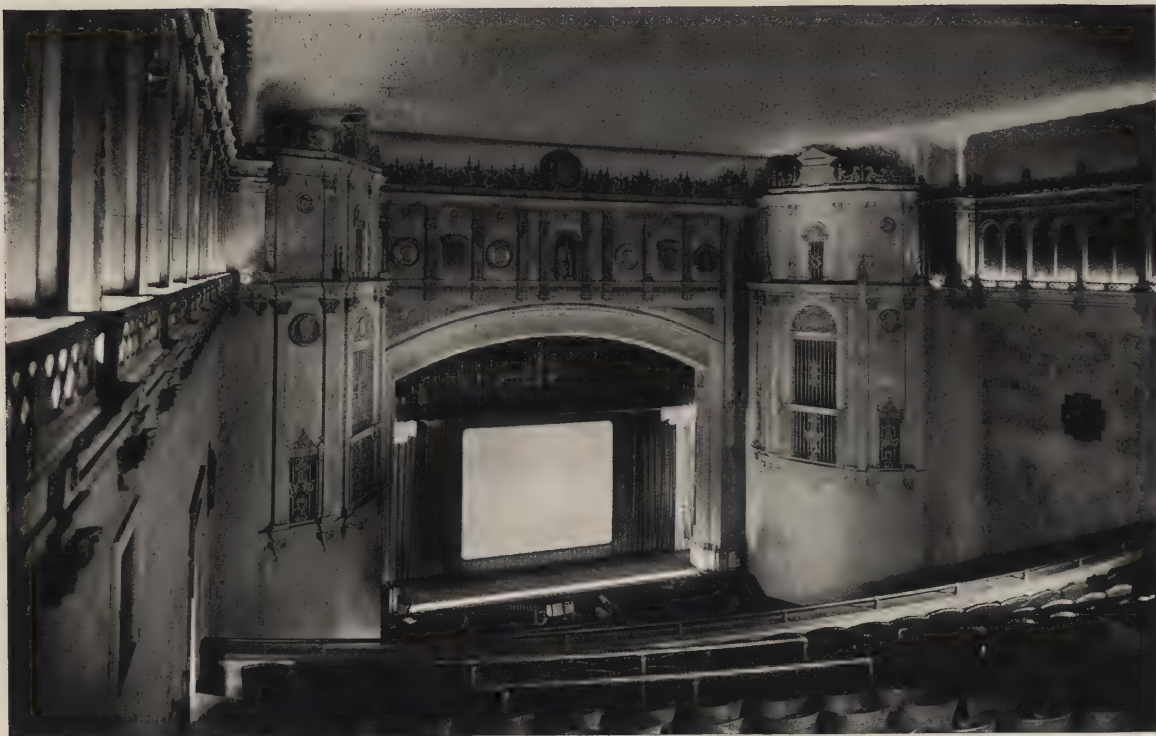
the front of the stage, a very bad thing to do. The placing of the screen at the front of the stage would make the first six or seven rows of seats undesirable, for the picture becomes distorted when viewed from this position and to view the screen at such an angle is also very uncomfortable. A good rule to follow is to place the screen within five feet of

the rear of the stage and arrange the sight lines accordingly. It is well to assume a stage depth of thirty feet clear which is usual for this type of house. This measurement is taken from the so-called curtain line at the point back of the footlights where the asbestos or steel curtain is located. This arrangement allows for the use of a stage setting which may be architectural in the (Con. on p. 33)



Proscenium of Loew's State Theatre, Los Angeles, Cal. Weeks & Day, Architects.

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Proscenium of Loew's State Theatre, Stockton, Cal. Weeks & Day, Architects.



Balcony and Boxes of Loew's State Theatre, Los Angeles, Cal. Weeks & Day, Architects.

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LLOYD WARREN.

LLOYD WARREN, whose devotion to architectural education made him a most powerful influence for the good of the profession and won for him the esteem of architects and educators as well as the gratitude of numberless students throughout the country, met his death by accident on the night of October 25. Mr. Warren, evidently seized by an attack of dizziness caused by an injury to his head sustained a few weeks earlier, appears to have made his way to an open window for air, and leaning out fell to the pavement of the court six stories below. The injury which was the indirect cause of his death was received while Mr. Warren was at Parma, Italy. His chauffeur ran his car onto a rock pile in avoiding a collision and Mr. Warren was thrown upward in such a way that his head struck a metal cross piece in the top of the car. The wound required eight stitches and had not completely healed at the time of Mr. Warren's death, surgeon's gauze being found on the wound.

Mr. Warren, who was a bachelor, lived at Harperley Hall, 1 West 46th Street, corner of Central Park West, New York City. He was a member of the Knickerbocker Club, Racquet and Tennis, Tuxedo, Century, University, and other clubs. He was a brother of Mr. Whitney Warren of the firm of Warren & Wetmore, architects, and was at one time associated with Mr. Whitney Warren in the practice of architecture, but for the last many years he devoted himself to educational work, chiefly as Director of the Beaux-Arts Institute of Design.

Mr. Warren was fifty-four years old. He studied at the Ecole des Beaux Arts, Paris, for seven years previous to 1899, in the Atelier Daumet, was an *Architecte Diplômé par le Gouvernement Français*, a member of the S. A. D. G., and one of the founders of the Society of Beaux-Arts Architects, from which the Beaux-Arts Institute of Design grew. At the time of the world war Mr. Warren headed the A. E. F. training school at Bellevue, in France, established for the purpose of making the facilities for study that abound in France available to members of the A. E. F. awaiting return home.

The growth of the Beaux-Arts Institute of Design to its present importance as a unifying and inspiring force in architectural education in this country, affording as it does, facilities for the comparison of the work of students in all parts of the country at its judgments, with the consequent stimulation of the students to put their best efforts into the work, has been due in a large measure to Mr. Lloyd Warren, to whom his associates in the work, the men who have contributed largely and freely of their own talent and energy, are the most ready to offer tribute for his leadership.

THE BURNHAM LIBRARY OF ARCHITECTURE.

FROM the Illinois Society of Architects' "Bulletin" we quote the following:

"It was ten years ago that Daniel H. Burnham died, leaving to the Art Institute a fund of \$50,000 for an architectural library. The income from the fund has been spent for books, under the guidance of a committee of architects; Howard Shaw, chairman, E. H. Bennett, Peirce Anderson, Hubert Burnham, and W. A. Shattuck, the last named succeeded by E. S. Campbell; John Holabird was added to the committee recently. The committee purchased the architectural books of Ryerson Library, and until 1920 the collection was kept in that library. By that time the nucleus of 1,200 volumes had doubled, and the architectural alcove had been outgrown. In January of 1920 the collection was moved into a newly finished room, adjacent to Ryerson Library. This room was designed by Howard Shaw and contains two murals contributed by the artist, Frederick Clay Bartlett.

"During these ten years the committee has striven to gather a good working library; additions of antiquarian character have been incidental. Yet in the present collection of 3,300 volumes there are many rare works of which any library might be vain. The first illustrated edition of Vitruvius, Florence, 1513; the first architectural book published in England, Serlio, dated 1611; Kip and Knyff's "Neuveau theatre de la Grande Bretagne," 1720; the "Oeuvres" of Jean LePautre and the so-called "Petit Marot" both of the seventeenth century; and the second Roman edition of Piranesi, 1748-1783; these are a few of the works necessarily kept behind glass. As a whole, the collection is open to the reader; and as the library is free at all times to architects and draftsmen, there is no hindrance to the man who means to know the work of the great men. As a matter of fact, it is really visited by a very small proportion of those who should know it."



Lloyd Warren.

PENCIL POINTS

THE AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following: "We have wound up the affairs of last year, and are now fairly embarked upon those of this year. Professors Frank and Showerman are both in residence. Professor Curtis arrived from Naples in the Ford sedan which he brought from America with him and which he and Professor Fairbanks are sharing. It is the only Ford sedan in Rome and creates quite a sensation in the city. The enrollment in the schools amounts thus far to twenty-four students, but we expect about as many more to join us as the season advances. The new men are all most enthusiastic about what they have seen of Europe. I attended Professor Frank's first lecture at the Forum today and there were many students from both schools present. Professor Frank is an inspiring lecturer.

"We have had an applicant in painting, who wishes to try the competition next spring in Rome. He is a young artist of twenty-two from California, and he has just had a year in Paris where he entered the Ecole des Beaux Arts. Former Sculptor Polasek and Former Painter Cox both appeared in Rome last month. It is needless to say that they were much interested in all that was going on, particularly Mr. Polasek who was not at all familiar with our buildings on the Janiculum.

"All our articles for the Academy number of Art and Archaeology are ready with the exception of Mr. Paul Manship's. He says he has never done any writing, but I heard him give a lecture eleven years ago on Greek Archaic art which was one of the best conferences I ever heard. He says he is writing the article and he ought to turn out something worth while.

"I attended a reception in honor of the Southern Commercial Congress (of North America), and I had an opportunity to talk with the chairman of the Congress, Mr. Clarence J. Owens. He asked permission to see the Academy so I invited him and his Congress to take tea on the terrace of the Aurelia with all Rome spread out at their feet, and then they all went through the studios. Before leaving I had a talk with him in my office, and he expressed the desire to help the Academy. He seemed to be a very active man and in touch with a great many interests. He said he would call upon Mr. Mead, a thing I sincerely hope he does.

"The large umbrella pine trees, thirty feet high, have just been erected in the forecourt of the main building. These trees are a gift from Mr. Kendall and I believe that Mr. Vitale also has a hand in their donation. They are twenty years old and their roots have been in boxes for the last three years, so that there is every hope that they will live. A hundred years from now I suppose these pine trees will look like some famous pine trees I know of at Hadrian's Villa. They will cover the forecourt with a beautiful net-work of green and branches.

"It may interest you to know that I had a call from four British architects the other day. They were studying the work of McKim, Mead & White and they knew all about the building before seeing it, from architectural drawings and photographs.

"Professor Fairbanks and I are trying to arrange for some casts for Princeton University. That university desires to reproduce two bays of Bramante's courtyard in Santa Maria della Pace at Rome, and the bays are to be placed in the new architectural museum at Princeton. I am negotiating with the Italian government for permission to do the work."

From a letter received from Frank P. Fairbanks, Professor in Charge of The School of Fine Arts, we quote the following: "September usually has been the concluding month for the third year Fellows but because of the deferred scholarships of the Architect Chillman and our Painter Lascari, only Jones bade farewell to the Academy at the customary time. Jones will arrive in Boston and go immediately to New Hampshire to the country place of Mr. George Baxter Upham, for whom he is to design a lion fountain head for an antique marble basin, after which he will return to New York. He has some portrait busts to do and Mr. F. Baker has talked of having

some of his family portrayed. If the Academy could each year send back its men as well fortified with prospects, and the talent to meet them, as is the case with Thomas Hudson Jones, there would be little necessity for a welfare committee for our returning Fellows.

"Professor Lamond, with the two Fellows, Composers Sowerby and Hanson, have covered an extensive itinerary during the summer; Venice, Vienna, Salzburg, Munich, Cologne, Bonn, were visited, where chamber music of an international character, such as at the Salzburg festival, was attended. Opera was heard in Munich, while in Venice and Cologne visits were made to publishing houses where information was obtained enabling the Musical Department to enlarge, in the future its library of scores. In England, Glastonbury, Gloucester and London were visited and Sowerby rehearsed his new Sonata for presentation at Aeolian Hall, London, on October 10th. The Leeds Festival began on September 30th and prior to it, Professor Lamond and Sowerby attended rehearsal for eight hours a day for a week, and survived!

"Hanson left the party on its way to England for a short visit to Sweden, where he expected to have one of his symphonies performed.

"While in London, Hafner, our first-year architect, got in touch with the director of the South Kensington Museum and engaged his interest in the model of St. Peter's dome that Hafner hopes to execute during his second year. From the general attitude of his reception the South Kensington Museum may acquire the model.

"James H. Chillman, Jr., has written an exceptionally able and illuminating paper on the Palladian Church of the Redentore, in Venice, in which he accomplishes, with not a little success, the acrobatic feat of refuting both the enthusiasts and detractors of Palladio, at one stroke. It is a very acceptable article for publication.

"Schwarz, our first-year painter, has returned from his travels and seems much rejuvenated. He has spent considerable time in the excellent environment of Florence and has made two copies while there.

"Ciampaglia, Griswold, Smith and Amateis are traveling, while Cecere, Hafner, Chillman, Schwarz and Lascari are at present in residence.

"Griswold has devised an excellent scheme (submitted in detail to the Committee on the School of Fine Arts) for a method of issuing tessere, by the Academy, for the important and most frequented villas in Italy, which will enable the office in Rome to omit an almost continual private correspondence with villa owners and save our Fellows from functioning as a bureau of inquiry for the constant stream of scholars passing through Rome."

PERSONALS.

C. DAVIS GOODMAN recently opened an office for the practice of architecture at 14 St. John Street, Suite 34, Montreal, Canada.

FRANCIS CHIAVERINI, formerly 117 Broadway, Providence, R. I., and WESLEY H. BLANK of Boston, Mass., have formed a partnership for the practice of engineering and architecture under the firm name of Chiaverini & Blank, with new offices at 32 Broadway, Providence, R. I.

EUGENE A. STOPPER, Architect and Engineer, has removed his offices from 1507 Arch Street to 510 Fuller Building, 10 South Eighteenth Street, Philadelphia, Pa.

PETER B. SHERIDAN, Architect, 803 Markle Bank Building, Hazleton, Pa., has removed his offices from the third to the eighth floor for the purpose of securing larger offices.

CARL P. BERGER, Architect, has removed his office to 500 Sydenham Building, 1512 Walnut Street, Philadelphia, Pa.

STANLEY BRUCE ELWELL and ROBERT MURRAY BLACKALL have become associated in the practice of architecture under the name of Elwell & Blackall, 44 Bromfield Street, Boston, Mass.

H. GEORGE FINK, Architect, has removed his office from the Republic Building to Suite 301-340 Merrick Building, Miami, Florida.

PENCIL POINTS



VERNON HOWE BAILEY

VERNON HOWE BAILEY'S early training was that of a newspaper staff artist. He studied at the Pennsylvania Museum School and the Pennsylvania Academy of Fine Arts, Philadelphia, where he first exhibited in its annual exhibition at the age of seventeen, following which he joined the staff of the *Philadelphia Times*, going two years later to the *Boston Herald* on which for seven years he was actively engaged in the making of character sketches and rapid drawings of the widest variety of subjects, illustrating important news events, including the National Republican and Democratic Conventions in 1900. In 1902 he made a series of drawings of the Coronation of King Edward VII. in London. The large number of drawings of London made during one year's residence at this period came to the attention of Sir Charles Holme, editor of the *Studio Magazine*, who published two series of these drawings and commissioned Mr. Bailey to make two additional sets of drawings of the collections of Oxford and Cambridge. Mr. Bailey's drawings also appeared in London newspapers, including *The Graphic*, *The Daily Mail*, and *The Express*.

Returning to America in 1902 Mr. Bailey made drawings for leading New York newspapers and magazines and his drawings have been featured in *Harper's Century*, *Scribner's*, etc., magazines for which he has travelled extensively in America and Europe. He has made drawings of a large number of American cities and "American Cities in Pencil," published in *Everybody's Magazine*, including the last drawings of old San Francisco made a few days before its destruction in 1906, attracted much favorable attention, as did his drawings of the St. Louis Exposition.

Besides subjects of an architectural nature he has pictured extensively America's great industries and because of his prominence in this field, he was the first artist authorized by the United States Government on its entrance into the war in 1917 to make drawings of the stirring activities in navy yards and munition works. He made the first drawings ever made inside the great Bethlehem steel plant and was the only artist permitted to make drawings with the American fleet at sea, this collection of nearly one hundred has been exhibited in the leading museums throughout the country. For the catalogue of this exhibition of Mr. Bailey's drawings Josephus Daniels,

the Secretary of the Navy, especially wrote a foreword in which he expressed his appreciation and thanked Mr. Bailey in behalf of the Navy. A series of prints of these drawings is in the *Muse de la Guerre* in France.

In 1921 Mr. Bailey made an extensive tour of Spain visiting its larger cities and many towns difficult of access in far remote districts. In Madrid he made a number of color drawings of the Palace of the Duke of Alba, also of his great fifteenth century castle of Coca in the Province of Segovia, one of the most notable ruins of Spain, and his entire collection of one hundred and sixty drawings were purchased by the Hispanic Society of America for the permanent collections of the Hispanic Museum where it is now installed.

In addition to his architectural and industrial black-and-white illustrations he has made water-color drawings of many American villas and important estates, and his drawings have been used extensively by leading architects. One of Mr. Bailey's drawings is reproduced on a plate page in this issue.

MOTION PICTURE THEATRE DATA

(Continued from page 29)

sense of being tied in with the theatre or a type with draperies, which has, in many instances, been handled very successfully. If this rule is applied in regard to the placing of the picture screen a better proportion will be immediately given to the outer face of the sounding board treatment and the attention of the designer will be called to the impossibility of placing seats in the portions of the house at the sides of the auditorium—at about the fourteenth row from the front, where the seats must be omitted because the screen cannot be seen. This open floor space which is provided is usually highly desirable, for building ordinances require exits at the front of the auditorium and this open space prevents congestion at the exits.

Where proscenium boxes are desired by the owners they should be carried in with the loge treatment of the balcony. This gives a better composition than detached boxes and produces the effect seen in theatres where the balcony forms a complete horseshoe. It also brings the boxes to such a height that they do not interfere with the view of the screen from seats in the auditorium. Usually three boxes are placed on either side. The entrance to these boxes should be arranged through a foyer back of the grand drape, which often forms the main feature of the proscenium treatment and a good example of which will be seen by reference to the illustration of the Capitol Theatre, New York. This foyer back of the boxes should contain a separate staircase leading up from the auditorium. It is required by many building ordinances and is usually three feet wide. This foyer also is used as a coat room by the people occupying boxes and there should be stairs or some other means of access to the organ loft which is usually placed above this foyer and directly back of the grand drape on each side of the auditorium, the organ being divided into two sections. Where the boxes are connected with the balcony it is possible to usher the people who have seats in the boxes to their places by bringing them up the grand staircase to the mezzanine and down through the balcony. This is regarded as more satisfactory and pleasing to the patrons than when they are ushered down the side-aisle of the orchestra and are then obliged to climb a narrow staircase in the foyer of the boxes.

The heights between the boxes, meaning the first level of each box, should be two feet, and each box is divided into three sections which allows eight inch steppings between the boxes. The steppings in the boxes should be three feet two inches wide. Lately theatre owners have come to see the desirability of providing very comfortable seats in the boxes and for this reason the wider steps are being used. The proscenium treatment in the type of theatre under discussion requires a space measured from the curtain line to the extreme point in the auditorium of about thirty-

(Continued on page 37)

QUERIES

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, Metropolitan Tower, New York City.

Question—Will you kindly advise me of the name of some book on the designing of log buildings such as are usually constructed for summer homes on lakes and in the mountains? **A. H. R. Answer**—There is a book entitled "Log Cabins and Cottages, How to Build and Furnish Them," by W. S. Wicks, published by Forest and Stream. We believe that the price is about \$2.50.

Question—Can you tell me of a book that treats of the specifications for a modern business building? **C. H. J. Answer**—"Modern Building Superintendence and the Writing of Specifications," by David B. Emerson, treats of such a building as you mention. It is published by Charles Scribner's Sons, New York City.

Question—Are there any descriptions and views of Long Island Dutch Colonial houses? **R. R. W. Answer**—A very interesting series on Dutch Colonial Houses in Flatbush (Brooklyn) appeared a score of years ago in *The Architectural Record*. You can probably consult these issues in a public library, or perhaps some architect of your acquaintance has preserved issues of that time.

Question—Will you please tell me where I can obtain a book on the five orders according to Giacomo Barozzi da Vignola and the price? **H. L. Answer**—An English translation of "Esquie's Vignola," one volume, bound, \$6.00, is published by Wm. Helburn, New York. Ware's "American Vignola" is in two volumes. Vol. I—The Five Orders, and Vol. II—Arches and Vaults—Roofs and Domes—Doors and Windows—Walls and Ceilings—Steps and Staircases. The "American Vignola" is published by the International Book Publishing Co., Scranton, Pa., at \$2.50 for each volume.

THE STUDY OF ARCHITECTURAL DESIGN

(Continued from page 18)

interior walls and mean a heavier poché; as before mentioned the big rooms require heavy poché no matter where located.

To really give scale to poché the student should study plans of executed work, measuring the thickness of construction and dimensions of materials, especially in documents of antique, Gothic and Renaissance work, for it is on these that our tradition of design is founded, and modern work, with its steel construction, is apt to make use of very thin walls unless the rooms are studied in section, in which case the walls are furred out to give the reveals our tradition requires.

The indication of the mosaic—and the drawing of the entourage—in the presentation should show the same characteristics as already exist in the poché. Usually the poché is in black ink, both the outline drawn with the ruling pen, and the surface between. All the other lines are drawn with a diluted ink, and should be sufficiently dark so that they will not be lost in the first washes of the rendering after being rubbed in preparing the drawing for rendering—and yet not so dark as to conflict with the poché. Just outside the poché it is well to put a "snap-

line"; none of the lines of the mosaic should cross this snap-line.

Figure 181 is a good example of a very simple presentation of a B Class problem—one submitted in the inter-scholastic competition of 1911-12—a riding school in the country. It is interesting to see how well the forecourt looks, drawn with so very few lines. Figure 182, a portico of the Grand Prix competition plan of M. Janin for a Chateau d'Eau, while very different in scale, shows in the same way how well the presentation of a plan may be studied, and how few lines are necessary if they are in the right place. This plan would give many ideas for the treatment of entourage.

Note—Students will find it well worth while to read the chapter on "Indication" in John V. Van Pelt's book "Essentials of Composition."

CARNEGIE INSTITUTE OF TECHNOLOGY.

THE Summer Course in Architecture at the College of Fine Arts of Carnegie Institute of Technology, Pittsburgh, Pa., under the supervision of Prof. H. Sternfield was very successful. A letter received from the Beaux Arts, New York, shows that Carnegie Tech. headed the list of awards for work done by the students at Summer School.

The Class "A" problem was "An Art Museum in South America," while the Class "B" problem was "An Aquarium," which was to be built on a "Private Estate." The Jury of Awards gave Carol B. Marks a first medal publication, and A. D. Reid a first mention placed publication, these being the highest awards that the Jury can give. The remaining awards were a second medal to F. C. Disque, Carnegie Tech. graduate and present Professor of Architecture at Penn State; Messrs. J. B. Blair, L. I. Broida and E. M. Gearhart first mention, and E. O. Anderson a mention.

Professor Sternfield, a Paris Prize Scholarship Man, deserves a great deal of credit for the showing these men made. With him as head of the department assisted by Prof. D. D. Ellington, also a Paris Prize Scholarship Man, Prof. Richardson, a Woodman Scholarship Man, the Architectural Department of Carnegie Tech. has one of the best faculties of this kind in the country. Luther Lashmit, graduate of Carnegie Tech., is an instructor in Architectural Design. He is the first Carnegie Tech. graduate to teach in the school from which he graduated.

THE ATELIER MEMPHIS.

THE Atelier Memphis held its election of officers for the new year September 22nd. Everett D. Woods, Massier; H. B. Burnham, Sous-Massier; Harvey Johnson, Captain of Nouveaux.

The Atelier Memphis is starting on its second year with growing enthusiasm and increase in membership. The Beaux-Arts spirit is taking hold and it is hoped that the success of the Atelier in Memphis will inspire the other cities of Tennessee to follow its example.

PENCIL POINTS

THE GENESIS OF A RENDERING

(Continued from page 13)

the cardboard, the centre touching first and the drawing being allowed to fall into place easily and smoothly. It is necessary for one who has never done it to try this part of the process a few times before good results can be obtained. A clean piece of thin paper is then laid over the drawing and the edge of a flexible triangle is drawn over the paper from the centre outward in all directions to squeeze out all the surplus paste and water. The cardboard should be tacked down on a board to prevent it from curling when the paste dries.

The drawing reproduced here was mounted on smooth cardboard of a cold gray color. I then laid on light washes of water color over the pencil work. Where the sunlight would strike the stucco of the house I put on a light wash of Chinese white. This brought up the contrast lost by mounting the thin paper drawing on the gray cardboard. The color is all on the sunlight parts, there is no color on the shadow parts. The colors used all have a great proportion of yellow in their composition. On the trees a little green and sometimes a little brown-pink was used. Of course if you want an autumn foliage effect brown-pink and carmine and orange may be used with the yellow. But in making a rendering of this kind I use no positive colors, with the exception of orange, occasionally. Orange can be used pure, but must be kept on the higher parts of the picture, such as chimneys, etc. It is so strong that it leads the eye away and, therefore, should not be used pure below the centre of the paper as the effect is unpleasant if the eye is lead below this point. In this drawing I used little, if any, blue, the cold gray of the cardboard showing through the thin paper supplies the blue needed, while the two other primaries are present in the water-color washes used. I may say here that no rendering in which color is used seems complete unless all the three primary colors are present in some form.

THE BOSTON ARCHITECTURAL CLUB.

WITH the co-operation of the architectural departments of the M. I. T. and Harvard, the Boston Architectural Club is making a vigorous effort to strengthen its educational work. Fully realizing the value of the competitive atelier system and recognizing what is generally admitted, that three or more ateliers are desirable for the best results of this system the club is endeavoring to develop a strong third atelier. Knowing that an atelier depends for its strength on its older men. Professors Ferran and Haffner are making every effort to get graduates back to their schools to work side by side with the undergraduates. Three prizes of over one hundred dollars each are to be offered on projects open to undergraduates and graduates not over five years out who do the projects at the school or at the Club. If the club can be made to appeal to these older men they will come to the club to do these projects, then more will come and a strong class of older men will be developed.

The club feels that in order to make a strong appeal to the older men the first step should be to secure for them that prestige which is enjoyed by *anciens* of successful ateliers. This will give the *nouveau* something to look forward to and the *ancien* a greater interest in the atelier. It is a prime requisite for *esprit de corps* in an atelier. The Education Committee of the club therefore has made a number of recommendations along this line, including the recommendations that only an *ancien* shall be eligible for the office of *massier* or any other office, that only *anciens* may vote for officers of the atelier, that to become an *ancien* a student shall have worked two years in the atelier and have entered Class B plan. It is also recommended that *anciens* shall cease to take part in atelier affairs after reaching the age of thirty, and that a student working in Class A, though he has not spent two years in the atelier, shall still enjoy the prestige of an *ancien*. This earnest and thoughtful effort on the part of the Boston Architectural Club provides matter for consideration by the members of clubs where the importance of having the older men in the atelier

may not have been fully realized or at least not effectively acted upon.

FINE ARTS FEDERATION.

AT THE annual meeting of the Fine Arts Federation, the following officers were elected for 1922-1923: Arnold W. Brunner, president; Charles Dana Gibson, vice-president; William Laurel Harris, secretary. The directors elected were: Arnold W. Brunner, J. Monroe Hewlett, Egerton Swartwout, Douglas Volk and Adolph A. Weinman.

THE first issue of the Art Center Bulletin appeared in July, 1922, and contains eight pages of interesting art news of the seven constituent societies: Art Alliance of America, Art Director's Club, American Institute of Graphic Arts, New York Society of Craftsmen, Pictorial Photographers of America, Society of Illustrators, and the Stowaways.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of PENCIL POINTS, published monthly at Stamford, Conn., for October 1st, 1922.

State of New York,
County of New York, ss.,

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared W. V. Montgomery, who having been duly sworn according to law, deposes and says that he is the Business Manager of the corporation publishing Pencil Points, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of	Post office address
Publisher, The Pencil Points Press, Inc.,	19 East 24th St., N. Y. City.

Editor, Eugene Clute, 19 East 24th St., N. Y. City.

Managing Editor, None.

Business Manager, W. V. Montgomery, 19 East 24th St., N. Y. City.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

The Pencil Points Press, Inc., 19 East 24th St., N. Y. City.

Ralph Reinhold, 19 East 24th St., N. Y. City.

F. W. Robinson, 19 East 24th St., N. Y. City.

E. G. Nellis, 19 East 24th St., N. Y. City.

Marion S. Carpenter, 920 Fifth Avenue, N. Y. City.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is..... (This information is required from daily publications only.)

W. V. MONTGOMERY,
Business Manager.

Sworn to and subscribed before me this twenty-second day of September, 1922.

[SEAL.]

G. H. SYKES,
Notary Public.

My commission expires March 30, 1924

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION

PART VIII.

By OTTO GAERTNER.

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Garages—This is a subject upon which volumes can be written but only a few general considerations can be discussed in an article of this kind. Perhaps later we can go into more detail. Garages are of several types, non-fireproof, private and commercial, as well as fireproof private and commercial. The commercial garage may include a service station or it may include a sales department. Generally speaking, the great increase in the number of automobiles in use and the enforcement of zoning and building laws, makes it necessary to give more care to developing the types of garages. They must have a good appearance at a reasonable cost, be planned for convenience to save time and labor, and as far as possible be of fireproof or fire-resisting construction. Forgetting for the moment the private garages, although many of the facts apply to them also, we will give attention to the types of a commercial character, remembering that a general discussion is of service not only to the draftsman but to the specification writer as well.

They must be designed so that the minimum number of square feet of area are needed to store a maximum number of motor vehicles and at the same time permit the utmost unhampered movement of the cars to and from their storage places. The buildings should be fireproof, even if this is not mandatory according to local laws, as is the case in most cities and progressive communities. Broad spaces with as few corners as possible for the accumulation of combustible rubbish are best. There should be ample light and ventilation. Ample light creates an incentive to keep all nooks and corners clean, tends to prevent accidents and consequent law suits and also saves time and labor by providing good light for examining, overhauling and repairing the vehicles. Ample ventilation permits the easy removal of the gases discharged by the exhausts of the automobiles and the gases of vaporized gasoline used for cleaning purposes or removed from parts of the vehicles. The gases from the exhausts, in addition to being offensive, are a dangerous cause of explosions and sometimes cause fatalities due to asphyxiation. In smaller quantities they destroy the health and energy of the people employed where they occur.

In addition to car storage space and working space, other spaces must be provided depending upon the particular use to which the building is to be put. It may be a building to be used for manufacturing parts and assembling cars, with storage facilities for both before they are distributed to the main territorial service stations which in turn distribute to the secondary service stations that supply local agents and repair shops. If the main territorial service station is near the border or sea coast it may need facilities for handling the foreign export departments of the company with the necessary show-rooms and office. Railroad freight sidings are often essential. The secondary service station must have considerable facilities by way of offices, etc., for handling visiting local agents from out of town and must have ample show-room space. In this type of building, most of the repair work of parts and accessories is done which cannot be done in the service stations of the local agents and ordinary repair shops. Often such agents and shops find that the company's service station can make such repairs or replacements of parts cheaper than they can themselves, so it increases the volume of business in the territorial service station. Although it is not common,

some of these territorial service stations also have departments for taking care of batteries, supplying gasoline, oil and grease and for taking care of tires, but generally these departments occur in the local agent's service stations and ordinary garages.

For all these types of buildings, property on a street corner is most desirable as separate entrances are most easily provided for the office and show-room space and for the storage and service parts of the building. Unless the building has a wide frontage this cannot readily be done on an inside plot without sacrificing the space for a wide driveway adjacent to the show-rooms and offices and the traffic entering or leaving the building interferes with the pedestrians going to and from the show-rooms. It may also curtail the necessary parking space near the show-room entrance for the motor cars of the people doing business there. A sloping site is often desirable, especially if it is corner property, since in a low building it enables the service and repair department to be located in the basement or on the floor above the ground floor where the offices and show-rooms occur. The service and repair department can then be reached without sacrificing either the space for a freight elevator and its approach or for a ramp. Access to a back street or alley is also a great convenience.

Also, location has been found to have much to do with successful business. Obviously, a property on the main thoroughfares adjacent to both the business and residential parts of the city is most desirable for local agents' show-rooms and service stations. If possible, the property should permit future expansion for prospective growth of the business and this should also be considered in planning the building itself both for the future need of changing about departments and for its future increase in area or height. Property that permits large window areas on all sides also has advantages. Buildings of this nature should have more glass than solid wall.

The distance between floors will be governed by the height of the building, but sixteen feet and preferably more should be allowed for the show-room floor. Automobiles do not make as favorable an impression when shown in a low or cramped room as when shown in the open. It is advisable to increase the entire story height in excess of the actual need so as to permit the introduction of a mezzanine floor behind the show-rooms and sales offices. The show-room should have large plate glass windows with ample space behind them so that the cars can be stood in such a way as to permit the whole of each car to be seen by the passerby and a large, well-lighted room makes a better background than dark mahogany or other material. If the window must have a background it should be light in color except in the unusual case of very light colored cars. Of course, the higher the story the farther back from the window the light will penetrate so that less artificial light is needed.

If a building is designed on the unit system so that it may be increased by adding more units side by side, or on top, there are likely to be heavier piers between the windows and it may not be feasible to have only the end piers heavy and the others light as is often done. Whenever possible, additional lighting should be provided by means of skylights, but if such skylights occur over the storage space for finished cars, care should be taken by providing ribbed, prismatic or ground glass which will not permit the hot sunlight to blister the finish on the cars. Eleven or twelve feet is a good height for the upper stories which should not be too low for proper light and ventilation.

The spacing of the columns is another item to be considered. While twenty and twenty-one feet on centres is a good and economical spacing structurally, it is not so good for a space where motor vehicles are to be moved about. A thirty-foot spacing or over is much more economical in the maintenance of the business and avoids accidents to the cars. Also, cars may be stored closer together and much time is saved in getting them in and out. Therefore, it is well to study this part of the prop-

PENCIL POINTS

erty from more than one point of view and if necessary increase the initial cost by increasing the column spacing if a saving in overhead is assured. In a one or two story building this initial cost will not be greatly increased and in such a building even fifty or sixty foot spans can readily be provided at a slight increase in cost, trusses being used instead of girders.

MOTION PICTURE THEATRE DATA.

(Continued from page 33)

two feet, measuring on the axis of the auditorium. The curve and projection of this feature depends on the sight lines which are established as previously described. For a house one hundred feet in width a stage opening fifty feet wide is very desirable. Other dimensions should be proportioned to this. The height of the opening, meaning the architectural height, can be what the designer wishes, but there is a girder or a truss placed, as a rule, twenty-eight feet above the stage level. This forms the constructional top of the stage opening and from this girder upward is a wall back of which are stored the various curtains. This height is established on the assumption that the gridiron which carries all the necessary apparatus in connection with the flying of the scenery, is fifty-seven feet above the stage. This provides ample height for the use of any set. It is important in this connection to bear in mind that the valence which is employed to cover the space between the actual top of the stage opening and the arch of the architectural treatment must be proportioned to the height of the curtain and that if the arch is made very high, the valence becomes too heavy and dwarfs the opening and injures the general effect of the treatment in the auditorium.

From the architectural arch springs the sounding board which is, without doubt, one of the most important features of the theatre. Although numerous attempts have been made to eliminate this curved surface, the old method of providing this big arch is the most successful one, not only from a design standpoint but from the practical standpoint of acoustics. Designers have often striven to get away from the usual auditorium treatment which embodies this arch and I know of some instances where the omission of the sound board has been the cause of great regret. In fact, one of the most important houses in the United States, a legitimate house and on a large scale, has given endless trouble. In many cases where a theatre has been built without a sounding board and complaints have come in from the general public, the owners have attempted to remedy the condition by suspending a wooden sounding board from the gridiron over the stage. In the smaller houses this is sometimes effective to a degree but in the larger ones it may be regarded as highly unsatisfactory. The most successful proscenium arch that I have seen to date is that of the Capitol Theatre, New York. One of the minor matters of design which it is well to note in connection with this proscenium arch is the manner in which the perforations to take care of the overhead ventilating system are arranged. The system employed for ventilation in this theatre is the downdraft system, which, I believe, is the most desirable for theatre ventilation. Referring to the illustration of Loew's State Theatre, New York, it will be noted that electric lighting has been provided back of the beam on the face of the proscenium arch to illuminate the wide front surface. This is highly desirable though in this particular case it is not so necessary as in the Capitol Theatre where this form of lighting brings out the more interesting treatment of this part of the building. In providing for this lighting it is essential to bear in mind that the space or trough must be at least twelve inches wide and that any treatment used on the face or corner of this proscenium must project sufficiently to permit the trough to continue to the top of the cornice or impost on the spring line of the arch. I have noted that in some instances on account of this matter not having been given any thought the trough could not extend the full length of the arch and the result is a failure.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Beautiful Homes—Attractive booklet illustrated in colors giving hints on wood finishing and interior decoration, covering all the rooms of the house. Also complete wood finishing specifications. 6½ x 8½ in. 30 pp. Berry Brothers, Inc., Detroit, Mich.

Stage and Theatre Lighting—Illustrated catalog covering all equipment required, together with much useful information on the subject. 6 x 9 in. 130 pp. Universal Electric Stage Lighting Company, 321 West 50th Street, New York.

Carborundum Anti-Slip Tile—Illustrated booklet with sectional drawings showing application of Carborundum treads under varying conditions. 6½ x 8½ in. 24 pp. American Abrasive Metals Company, 50 Church Street, New York.

Artists' Colors and Supplies—Catalog and price list covering complete line. 6 x 9 in. 52 pp. Winsor & Newton, Inc., 31 East 17th Street, New York.

The G & G Telescopic Hoist—Fully illustrated catalog with specifications, quarter inch scale drawings of all models and special material-handling section. 8½ x 11 in. 20 pp. Gillis & Geoghegan, 537 West Broadway, New York.

Architectural Brass and Bronze Work—Illustrated portfolio showing many installations of various types of work. 9 x 12 in. 80 pp. Penn Brass and Bronze Works, 105 Dobbin Street, Brooklyn, New York.

Copper—Its Effect Upon Steel and Roofing Tin—Scientific treatise on the subject showing exhaustive comparative tests of roofing materials. Fully illustrated. Specifications. Plates showing details for tin roofing and sheet metal work. 8½ x 11 in. 40 pp. American Sheet and Tin Plate Company, Frick Building, Pittsburgh, Pa.

Brixment for Perfect Mortar—Booklet with frontispiece illustrating residence designed by Mr. Charles A. Platt. Complete information regarding Brixment mortar. 8½ x 11 in. 16 pp. Louisville Cement Company, Louisville, Ky.

Store Fronts in Architectural Terra Cotta—Profusely illustrated brochure with many sectional drawings and full-page plates. 8½ x 11 in. 50 pp. New Jersey Terra Cotta Company, Singer Building, New York.

Ventilation—History of ventilation, complete engineering data, capacity tables, installation drawings and specifications for installing in various types of buildings. 8½ x 11 in. 72 pp. Moline & Heat, Moline, Ill.

Rookwood Pottery—Loose-leaf portfolio showing applications of Rookwood tile to various types of rooms in different classes of buildings. 9 x 12 in. 60 plates. Rookwood Pottery Company, Cincinnati, Ohio.

Kawneer Store Fronts—Four valuable booklets with sheets of full-sized details showing store front construction suitable for all types of buildings. The Kawneer Company, Niles, Mich.

Hoffman Casements—Loose-leaf portfolio with many full-page plates showing details of casement window construction. Full-sized detail sheets 24 x 30 in. 8½ x 11 in. 34 plates. Andrew Hoffman Manufacturing Co., 28 East Jackson Blvd., Chicago, Ill.

The Kelsey Systems—Collection of six interesting booklets on the subject of heating and ventilation. Illustrated. Specification data. Kelsey Heating Company, Syracuse, N. Y.

Imperial Super-Smokeless Boilers—Loose-leaf portfolio showing modern fuel saving equipment. Engineering data. Blue prints. Tables of capacities. 8½ x 11 in. 32 pp. Utica Heater Co., Utica, N. Y.

Sanitary Hospital Apparatus—Complete illustrated catalog showing hundreds of engravings of all types of equipment required in modern hospitals. Should be in every library. 9 x 12 in. 132 pp. James B. Clow & Sons, Chicago, Ill.

Catalog No. 295, issued by the B. F. Sturtevant Company, treats on the subject of Air Washing, describing equipment suitable for installation in factories, theaters and other types of buildings where air conditioning is required. 8½ x 11 in. 44 pp. The B. F. Sturtevant Company, Hyde Park, Boston, Mass.

The Kernerator—Complete illustrated booklet describing the Kerner incinerators for disposing of garbage and other refuse in residence and apartment buildings. Complete specification data and blue prints. Kerner Incinerator Company, 596 Clinton Street, Milwaukee, Wis.

X-Ray Reflectors—Catalog 22 showing complete line of equipment suitable for store windows, show case lighting, factory lighting and residences. Specification data. 8 x 10 in. 40 pp. National X-Ray Reflector Company, 235 West Jackson Blvd., Chicago.

Distinctive Wall Paints—Booklet covering treatment of walls in commercial buildings, hotels and institutions. Specifications. 5 x 8 in. 16 pp. U. S. Gutta-percha Paint Company, Providence, R. I.

Color Harmony in Floors—Booklet covering subject of floor treatment from entirely new angle. Maple Flooring Manufacturers Association, 1082 Stock Exchange Building, Chicago, Ill.



Detail of House, Oyster Bay, N. Y., Carrere & Hastings, Architects

The architects have not been hampered for money in working out their designs for this noble structure, in which the very genius of brick, as the fired clay of the all-supporting earth, has been embodied. Unfortunately the half-tone does not reproduce the exquisite color blending of the brickwork.

Variety of Effects in the Face Brick Wall

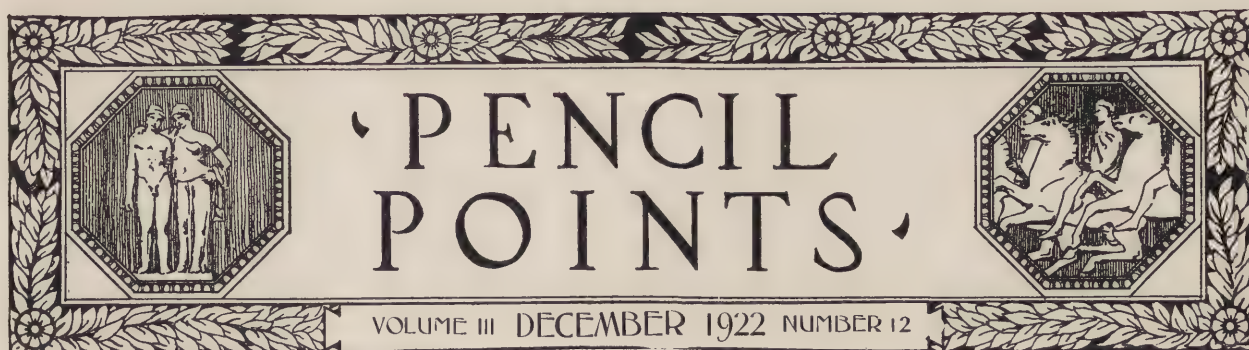
THE many beautiful Face Brick walls—in residences, in commercial, industrial and public buildings—that are built every year indicate the infinite variety of effects obtainable by the architect in the use of this plastic material. The great variety of color tones and textures in the material itself, the arrangement of the units in various bonds, the innumerable patterns obtainable by shifting the headers or stretches in successive courses back and forth, and the color, texture, and

kind of mortar joint, all contribute to extend the artistic possibilities of the Face Brick wall.

The Portfolio of Architectural Details in Brickwork shows more than a hundred examples of beautiful brickwork—all in standard size brick. These de luxe half-tone plates are assembled in three series, each in an enclosed folder, with printed tab, ready for filing. A set of these folders will be sent to any architect requesting them on his office stationery.

AMERICAN FACE BRICK ASSOCIATION

1760 PEOPLES LIFE BUILDING • CHICAGO, ILLINOIS



GOOD PRACTICE IN CONSTRUCTION

ON THIS page last month we printed an appreciation of a book on the æsthetic side of architecture, now we want to tell our readers the inside story of the making of a book on a quite different side of architectural work—"Good Practice in Construction" by Philip G. Knobloch.

For the past year and a little more, Mr. Knobloch, with the co-operation of a group of architects and specialists on materials and methods, has been working on a set of plates of details of construction with the purpose of producing a set of drawings representative of good practice in present-day building construction.

That the method of preparing this work seems to be unique, is a matter of importance, only because this method was developed as the logical procedure, —not a following of the customary formula, but a simple, direct attack upon the problem.

It seemed clear that if a book was to represent good present-day practice, the material should be drawn from the files of architects' drawings of buildings that have been actually constructed in the last few years.

It seemed equally clear that to be of the widest usefulness the plates should not represent the peculiarities due to the special conditions present in the case of any one building.

Accordingly a number of architects were asked to give the needed assistance, including some of the most important firms in the country, and Mr. Knobloch set to work selecting drawings to form the basis of his work. With these in hand, his next step was to combine features from the work of different offices wherever this would produce a detail that would be more sound, economical, workmanlike or better in any other way. The shop drawings, which had been borrowed when ever available, were also made to contribute their share in many cases. All this brought into play Mr. Knobloch's knowledge and judgment gained through his experience on the job, as well as in the drafting room.

When the sheets had been drawn in pencil the work of criticism began. Men who because of their long connection with some one class of material or type of construction were especially well equipped to spot anything not in accord with the best practice in their own field were called upon to examine the drawings and make criticisms and suggestions. These criticisms were weighed, one against another,

harmonized and made use of by Mr. Knobloch in perfecting the details shown.

In order that a fresh eye and mind might go over the whole set of plates, Mr. Knobloch next submitted them for thorough examination to a colleague of unusually wide experience and keenness.

Finally, after the drawings were inked in ready to be engraved, they were turned over to Mr. Thomas Hastings, who had taken a lively interest in the project throughout. Under his personal direction the complete set was examined by the best qualified men of the staff of Carrere and Hastings. Mr. Hastings, enthusiastic about the work and, as always, ready to do anything possible to advance architectural education and practice, then consented to write a preface to Mr. Knobloch's book.

The plates are now being engraved, the printing will soon begin and in a few weeks this, the second volume of THE PENCIL POINTS LIBRARY, will be on the market. That it will be equal in value in its own way to Mr. Guptill's successful book, which was the first of the set to be issued, we are sure.

It will contain fifty-two plates, 9 x 12 in., comprising between two and three hundred subjects covering a wide range of building practice. One of the plates is printed on page 37 of this issue. The plates will be printed on heavy paper on a gray tone background, and there will be a complete index for ready reference. We believe that its usefulness will give this work a place in every drafting room.

TRAVELLING EXHIBITION.

THE exhibition of sketches selected from among those submitted in the Birch Burdette Long Sketch Competition for 1922 will be sent on the road as a travelling exhibition shortly after the showing at the rooms of the Architectural League of New York. A large number of requests have already been received from architectural clubs and educational institutions in various parts of the country for the loan of this travelling exhibition. As the schedule has not been completely made up, applications can still be considered. Last year's travelling exhibition went from coast to coast. After leaving the Architectural League of New York, it went to the Massachusetts Institute of Technology, Boston, closed with an exhibition at the San Francisco Architectural Club about six months later.

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Pencil Sketch by Louis C. Rosenberg, New York City. Winner of the First Prize in The Birch Burdette Long Sketch Competition for 1922.

THE BIRCH BURDETTE LONG SKETCH COMPETITION FOR 1922

THE jury of award for the Birch Burdette Long Sketch Competition for 1922, conducted by PENCIL POINTS, met on November 13th at the rooms of the Architectural League of New York, in the Fine Arts Building, New York City, and awarded the prizes, aggregating \$250, donated by Mr. Birch Burdette Long. The members of the Jury of Award were as follows: Mr. Cass Gilbert, Mr. Alexander Trowbridge, Mr. Raymond M. Hood, Mr. Birch Burdette Long and Mr. Eugene Clute.

Hundreds of sketches were received from all parts of this country, from Canada, and from several foreign countries. There were even some from Shanghai, China. The general grade of entries this year was notably higher than in last year's competition.

In this issue are reproduced sketches by the winners of the first, second, third and fourth prizes, and by the winners of the six prizes of the fifth grade as well. As a number of these sketches are either in water color or contain touches of color, and as they have had to be shown at reduced size, an imperfect idea of them is unavoidably conveyed in some instances. Many of the sketches awarded prizes were not well adapted to reproduction.

An exhibition of sketches selected from among those entered in this competition opened for one week at the rooms of the Architectural League of New York, on the evening of Thursday, November 23. This exhibition will be sent on the road as a travelling exhibition, as was done last year.

Report of the Jury

The jury takes this opportunity to congratulate PENCIL POINTS upon the admirable showing made in this competition. Two hundred and eighty-one drawings were submitted by one hundred and sixteen competitors. A great majority of these drawings are of special merit, both from the standpoint of the program and as architectural renderings, keeping in mind always that the announced purpose of this competition is to stimulate an interest in sketching, more particularly among draftsmen and students. The subjects are of the most varied character. The competitors are from five different countries, including China, Scotland, England and Italy, and from various parts of the United States.

The jury has found the usual difficulty in comparing drawings of different size and method of rendering, but has endeavored to adhere very closely to the evident intention of the program and of the donor of the prizes.

The jury notes with particular interest the very high excellence shown by those who have chosen to render their drawings in pencil. The rare and colorful qualities and the admirable draftsmanship displayed

in this medium are in some instances worthy of high commendation.

It is encouraging to note the entrance into this competition of comparatively inexperienced draftsmen and illustrators, both men and women. We feel that this spirit of endeavor should be encouraged, and in many cases the jury has found evidences of artistic impulse and conception in the choice of subjects and in the expression of that choice, even where there is a serious lack of technical excellence, and it feels that such competitors should be encouraged to continue, for they will undoubtedly, with more experience, achieve excellent results.

The jury bears in mind that this is a competition of sketches from the object, not formal drawings, but such drawings or sketches as are made with the free-hand and a seeing eye.

It has given weight to those drawings which appear to show a sense of value in perspective and in the expression of the planes of the picture as well as values more expressly called for in the program. The ability to see accurately, to grasp the salient points of the subject, to catch the spirit of architectural sketching and illustration, and at the same time make a good pictorial composition, has been regarded as of great importance. While expressing this view the jury wishes it understood that the judgment is not alone rendered upon these qualities, but upon the apparent appreciation of the subject rendered in some cases without accent. The evidence of sincerity and truthfulness in rendering is also a consideration. The avoidance of the tricks and mannerisms and the affectations of some of the more experienced and notable illustrative artists that are so often used without being assimilated by the comparatively inexperienced is to be commended wherever found.

The jury again calls attention to the value of the pencil as a medium of expression of form, color, light and shade, and particularly of perspective. Pencil illustrating at its best requires sheer draftsmanship and is never successful without a mastery of perspective. The translation of color value and texture by tones and gradations through the medium of the pencil can be successfully carried very far, but the most effective drawings are often those which have been made in the simplest fashion. The free, sure line always counts. In sketching, the eye should seize upon the subject with the instantaneous vision of the camera and record it almost as quickly, but in a selective manner, giving proper emphasis to the outstanding features and subordinating the unimportant details—conveying the impression rather than endeavoring to state all the facts.

While in the foregoing we have dwelt at some length upon the use of the pencil as a medium, the

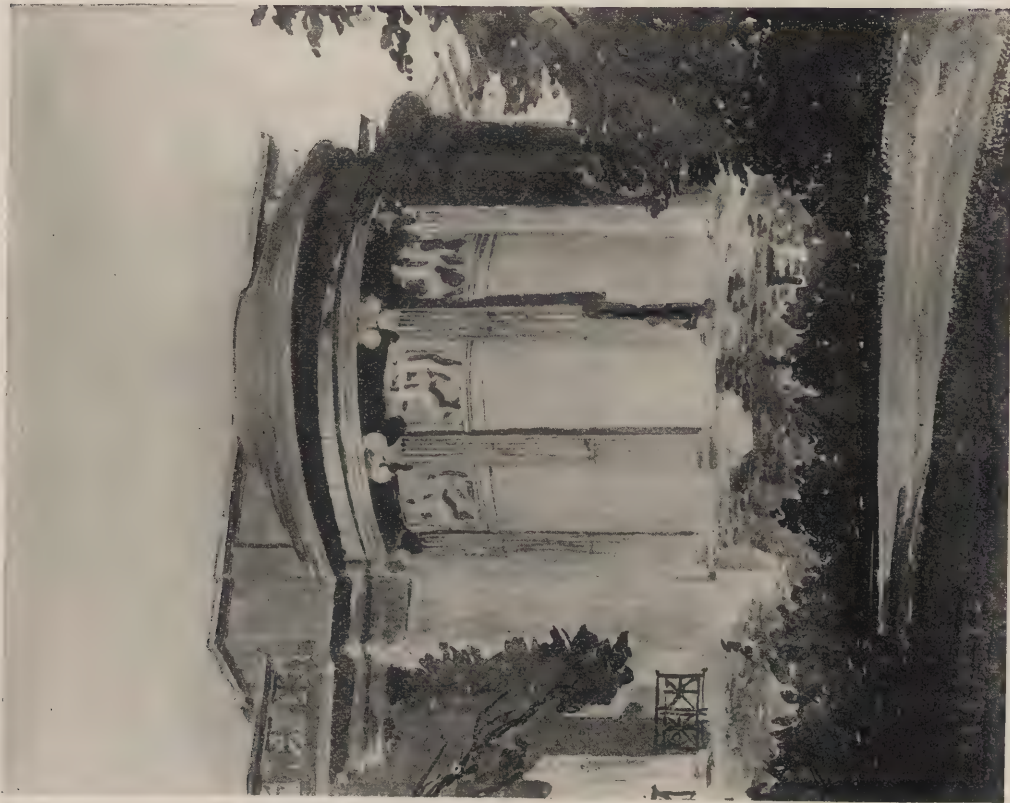
(Continued on page 43)

PENCIL POINTS

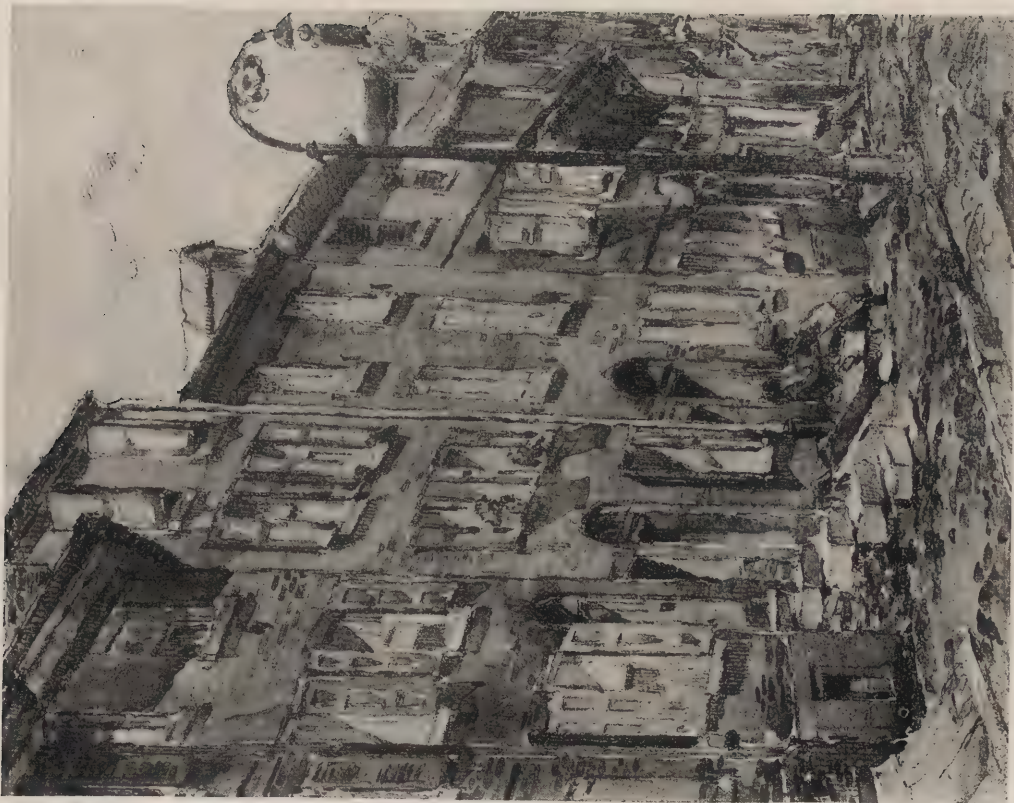


Pencil Sketch by Lionel H. Pries, San Francisco, Cal. Winner of the Second Prize in the Birch Burdette Long Sketch Competition for 1922.

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*Water-Color Sketch by Mr. Keck,
Winner of the Fourth Prize.*

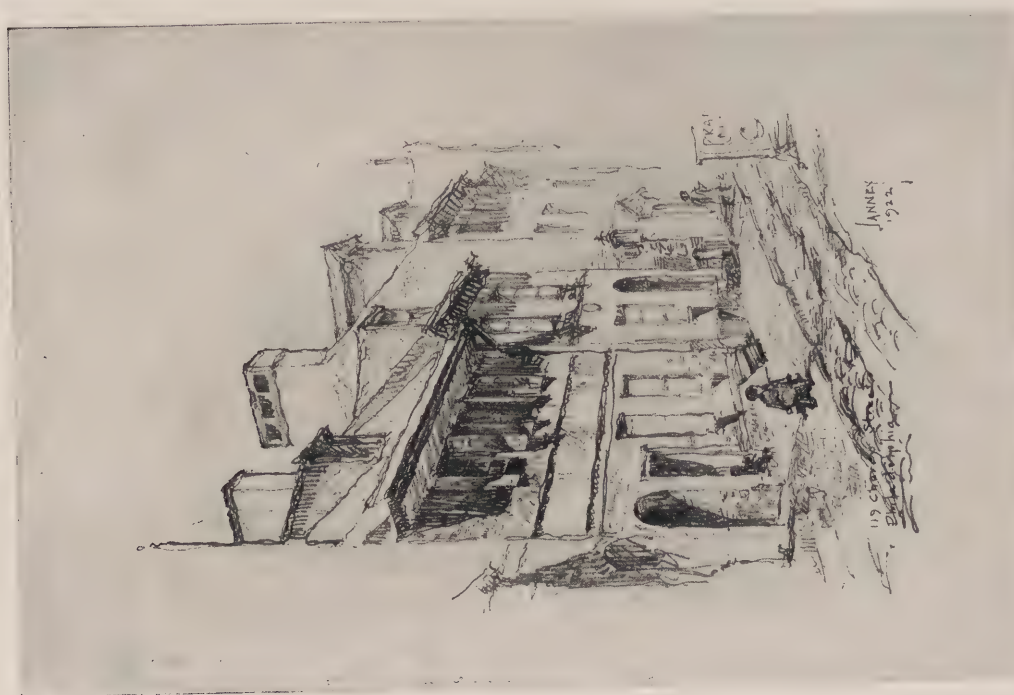


*Water-Color Sketch by J. E. Jackson, Abington, Pa.,
Winner of the Third Prize.*

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Pencil Sketch by E. Maxwell Fry, Liverpool, England,
Winner of a Prize of the Fifth Grade.



Pencil Sketch by John Craig Janney, Philadelphia, Pa.,
Winner of a Prize of the Fifth Grade.

PENCIL POINTS

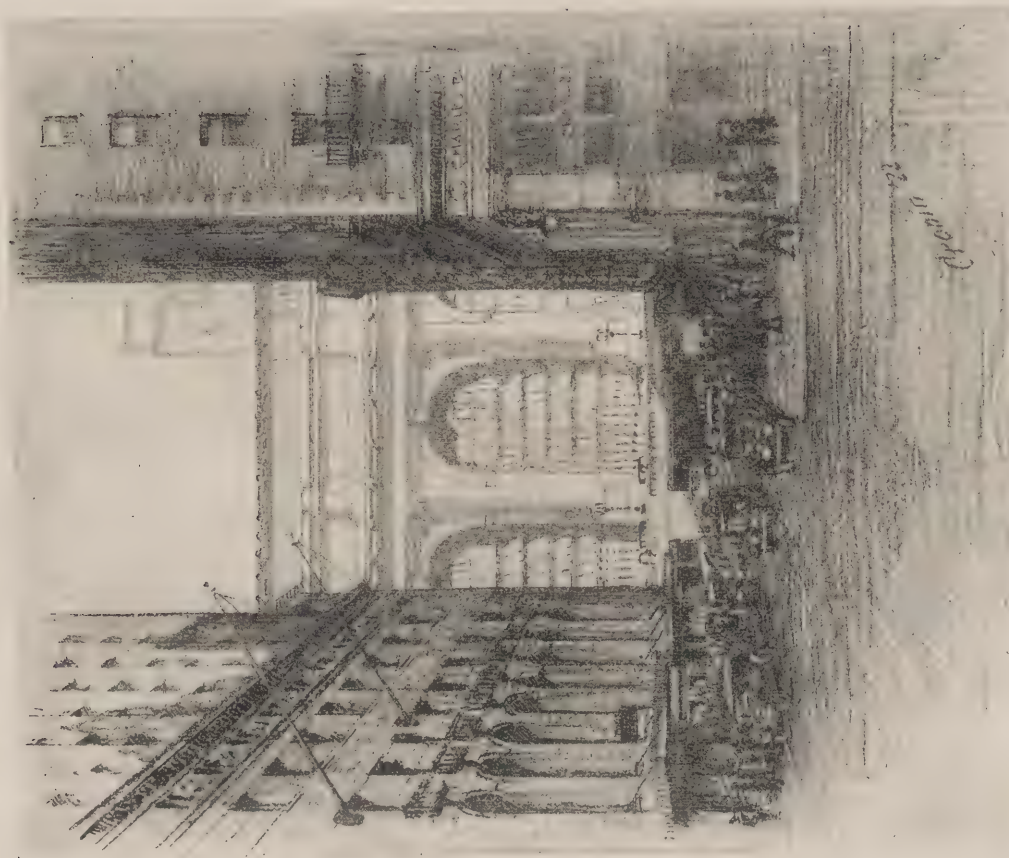


Pencil Sketch by Edward J. Weber, Pittsburgh, Pa., Winner of a Prize of the Fifth Grade.



Pencil Sketch by George A. Gibbons, Philadelphia, Pa., Winner of a Prize of the Fifth Grade.

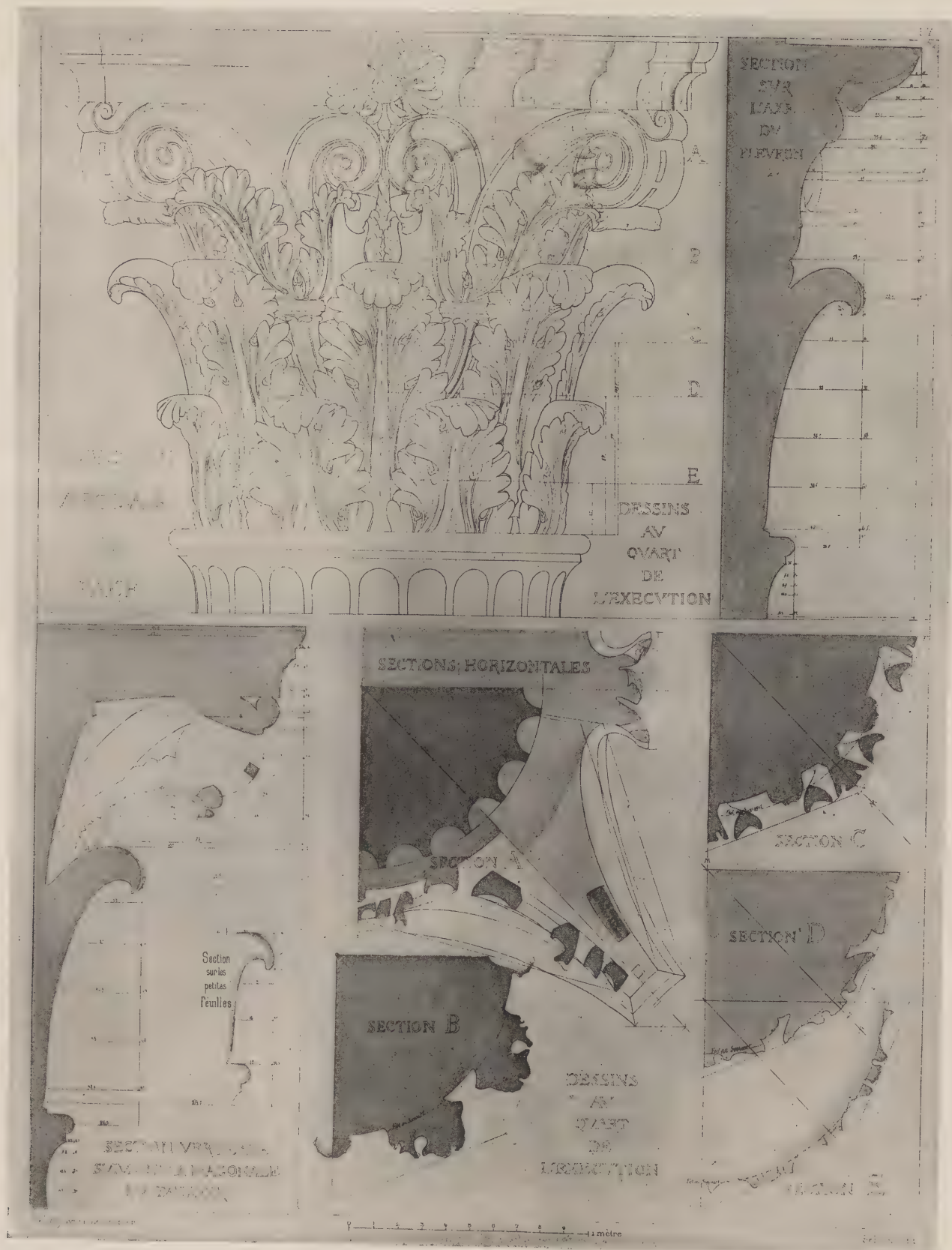
PENCIL POINTS



*Pencil Sketch by J. T. Cronin, New York City,
Winner of a Prize of the Fifth Grade.*



*Water Color Sketch by G. G. Gilkison, Pittsburgh, Pa.,
Winner of a Prize of the Fifth Grade.*



DETAIL OF TEMPLE OF MARS THE AVENGER, ROME
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

On the other side of this sheet is reproduced a plate of measured drawings of a capital from the Temple of Mars the Avenger, Rome. A rendered elevation of this capital and a rendering in perspective have been shown in this journal recently, making a complete presentation of an unusually interesting bit of detail.



PENCIL SKETCH, BY KENNETH CONANT. CATHEDRAL AT SEGOVIA, SPAIN.

The pencil sketch shown on the other side of this sheet is one of a very interesting series of sketches made by Mr. Conant while he was abroad last year. They are admirable examples of pencil technique as well as excellent representations of architectural subjects. They are drawn with an unusual perception of architectural values.



PENCIL DRAWING BY LOUIS C. ROSENBERG

The sketch reproduced on the other side of this sheet is one of three submitted by Louis C. Rosenberg, winner of the first prize in the Birch Burdette Long Sketch Competition for 1922. It is notable for the mastery with which the impressive scale of the great arches has been conveyed and the figures indicated, as well as for many other qualities that give it distinction.



Reproduced through the Courtesy of The Leitch-Judge Co.

"BIG AND LITTLE FIGHTING SHIPS" BY VERNON HOWE BAILEY

One of the large collection of drawings made by Vernon Howe Bailey following the entry of the United States into the European War is reproduced on the other side of this sheet through the courtesy of the publishers of "Leslie's Weekly" in which it appeared. Our reproduction was made directly from a lithograph loaned to this journal by Mr. Bailey. The subject "Big and Little Fighting Ships" is a well-chosen one, for the smaller craft make an excellent contrast to emphasize the scale of the great super-dreadnoughts. This picture was drawn in lithographic pencil on paper and transferred to the stone from which the lithographs were pulled. One of these proofs is in the Musée de la Guerre, Paris. This picture also appears as an illustration in the important work by Albert E. Gallatin, "Art and the Great War." Mr. Bailey made this drawing at the Brooklyn Navy Yard. The ship at the left is the New-York, flag ship of the fleet, and the ship upon which Mr. Bailey was quartered while making his drawings when the fleet put to sea.

ARCHITECTURAL DETAIL PART XIX

BY JOHN VREDENBURGH VAN PELT

This is the nineteenth instalment of an article in which Mr. John Vredenburg Van Pelt, formerly Professor in Charge of the College of Architecture, Cornell University, Architecte Diplômé par le Gouvernement Français, and author of "Essentials of Composition," will discuss the designing of good architectural detail and point out the means by which the ability to produce good detail can be developed. Reproductions of detail drawings from some of the best architectural offices will accompany this article and the publication of this series of drawings will be continued after this discussion of the subject has been completed—making a valuable feature of this journal indefinitely.

THE method usually adopted in making a study of ornamental detail is primarily historical. The characteristics and peculiarities of Egyptian, Greek, Roman, Romanesque, Gothic and Renaissance are emphasized in turn without special attention to the particular material in which these characteristics and peculiarities were expressed. From time to time an able treatise has developed the exhaustive study of a material. Of such are Munz's "La Tapisserie" and Day's "Windows." Authoritative as these works are they perforce can not be comprehensive because their scope precludes comparison of the qualities of expression in different materials. It seems to me that our own present study of detail may be more profitable if we depart from the beaten track and successively study each material, examining what the past has to offer primarily to impress upon our minds the possibilities and the limitations that are co-existent in each. This should help us to develop our power in the creation of new designs. We may miss much that would be valuable were we aspirants to the title of archaeologist, historian of art, or expert in the authenticity of old furniture and paintings; but it should help us to do better work as architects and designers and that, I take it, is the aim of the readers of PENCIL POINTS.

Wood was undoubtedly the material in which some of the very earliest essays in art were attempted by the human race. True, no examples are left of much that may have had great beauty. Wood is too perishable. Even such a late art as that of Greece sets us guessing at the manner in which the roofs were timbered and it is not credible that a civiliza-

tion that decorated its stone with wonderful sculptures and brilliant colors left its woodwork bare. Mediaeval Europe (we may pass over the remains of Egyptian woodwork) is the first really profitable field of study, but from the middle ages to the present wood is the material that has rendered more general and universal service than any other.

Before examining special examples it is important that we look back at our fundamental laws and define clearly in our minds the elements essential to good woodwork. The outstanding peculiarity of wood is its fibrous quality. It is tough across the grain but splits with it. It may be had in long pieces but not in great widths. It does not shrink and expand much in the direction of the fibres, but does change its size laterally with every variation of the humidity of the atmosphere. It is not a very costly material, is readily carved and mouldings may

be made sharp and clear, especially in the direction of the fibres, although not as fine and durably sharp as in the finer metals. It may be finished in a great variety of colors and serves admirably as the backing of gilt and enamels.

What may we derive from the foregoing? Evidently that woodwork acting, or suggesting that it acts structurally, should be in straight pieces. Purely instructural and decorative woodwork may be curved within the limits of a reasonable board or timber width or within the limits of a possible assemblage of different pieces. The tendency to shrink and expand laterally introduces another element in the proper assembling of different pieces of wood. Designs should be so made that joints will be covered. The scale of



Old Oak Linenfold Panel of Cupboard Door from
Portion of an Illustration in the "History of
English Architecture, The Age of
Oak," by Macquoid.

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349 ABBAYE DE SAINT-DENIS. LE

Portion of the Choir Stalls, Saint Denis.



Portion of Choir Stalls, Antwerp Cathedral.

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wood design ought to be much finer than that of stone but not as fine as that of ivory or chased bronze. While it would be unreasonable to make a design for stone that would require cutting away the majority of the face of the block in order to leave a small projecting point, in wood this is less bad as the removal of this large volume does not entail waste of expensive material nor does it require undue labor. Indeed pieces of carved wood may be mounted upon a background although this is usually less satisfying, and the subtlety of the effects less beautiful than if the whole be carved out of a solid piece.

How does the woodwork of our fathers comply with all of this?

On page 26 we have a wonderful piece of Gothic carving, part of the choir stalls of Antwerp Cathedral. Notice the solidity and strength of the seats themselves, made to withstand the attacks of restless choir-boys' heels and the heavy corpulence of older choristers. Behind

and above these there is a fretwork of the most beautiful carving terminating in a series of crests, pinnacles and finials of fairy-like delicacy. Still, permeating the whole of this wonderfully intricate design one feels the strength of the framework rising through the interior in a series of moulded shafts that give to the beholder a sense of security and unconscious repose. Do not leave this astounding bit of work without examining and appraising the beauty of line and proportion and the delicacy of the detail of the small figures. Notice how the composition of each figure varies and contrasts with that of its neighbor. While it could hardly be applicable today to anything outside of church or collegiate work, the fine feeling for nicely balanced proportions and for a logical suiting of the kind of woodwork to its special uses and position cannot fail to be helpful to the thoughtful student.

Less well designed and consequently less beautiful, nevertheless of marked interest, are the early Renaissance choir stalls of St. Denis' (page 26). While the delicacy of the Antwerp carving proclaims itself wood, the St. Denis design might almost be for marble. Still it is good woodcarving and the varying motives of the panels are of great interest. It is interesting to notice how non-observance of the law of contrast has marred the effect. The series of carved subjects take up a height equal to that occupied by the inlaid subjects below them. From this two horizontal bands result. They are differ-

ent in kind and effect, the upper vibrating with highlights and dark spots while the lower is flat, yet they do not contrast in size. Neither dominates and the horizontal dividing moulding cuts the screen unpleasantly in two. Another faulty repetition exists in the lack of contrast in perspective between the height of the entablature and the height of the cove. This is relieved somewhat by the brackets of this cove, but they are not marked enough to be effective and carry up the lines of the pilasters. Do not turn from this illustration without having examined



House at Noyon, in Northern France.

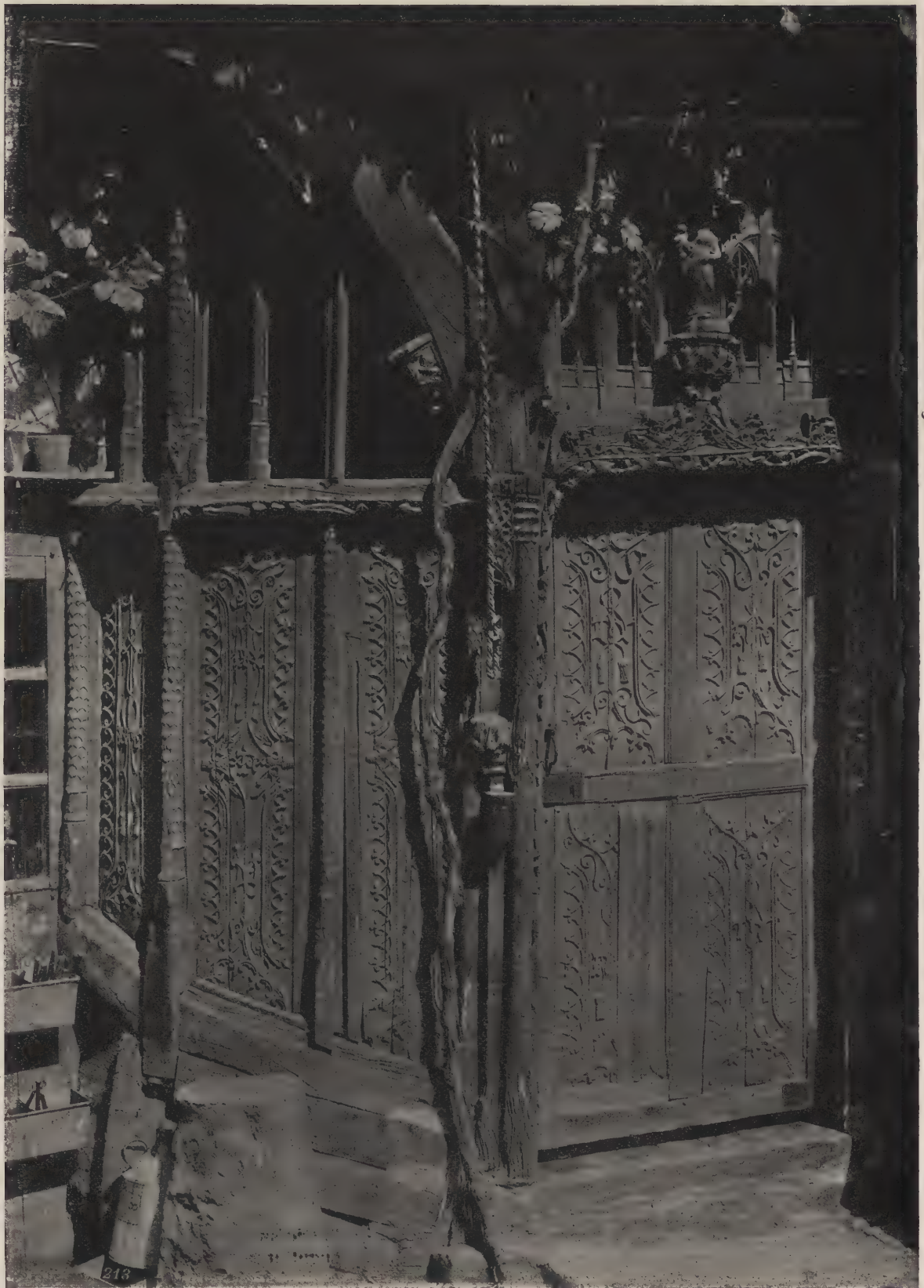
the lovely carving of the stall backs and frieze. One of the chief charms of this composition lies in the careful modulation between the brilliant panels, seat partitions and seats, the subtle and more uniform frieze and backs and the open work of the transition screen at the end.

In contrast with the two preceding examples is the linenfold panel on page 25. It is from a cupboard door, but is characteristic of an enormous

stretch of English wall panelling and very beautiful panelling, too. In such work it is important that the lateral dimensions of the panels be not excessive. Otherwise crackings and splittings are sure to follow and although the carving may soon look antique, it can never look like good craftsmanship. In passing, it is worth while to observe that linenfold work is more beautiful when the folds are equal repetitions or when they contrast definitely. The very flatness of this or perfectly plain panelling makes an excellent foil for a brilliant piece of carved work. A good modern example is the illustration on page 30 of a room in the Parge House of which Frederick Sterner is the architect. There is really very little carving here, yet it counts for its full value. The string of the stairs and the major, especially the lower part of the newel, are in low relief, rather flat in effect. The little figure and the upper part of the newel contrast with this. Thus three notes are struck, that of the perfectly flat panels, that of the low relief carving, and finally the high relief figure and finial. The iron work of this room is well worth a little study. It makes one regret the electric switch and wish that that too had been of wrought iron. Doubtless the moral to be drawn is that it is unsafe to neglect even the most insignificant details of a design.

Another kind of woodwork is that which has a structural as well as a decorative reason for its existence. On pages 28 and 29 are two views of

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Detail of Exterior of the Maison de Francois I, Abbeville.

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of the Maison de Francois I at Abbeville an excellent bit of early French Renaissance. The timbering in the courtyard is logical and at the same time designed so as to present interesting, well-balanced contrasts. Notice that in some places the plaster is recessed nearly an inch. The brackets and knees have voiced their own sentences. On the left the cutting away of the wood has been sufficiently restrained to keep the corbels within the proper limits of strength offered by the relation between a lateral offset in a piece of timber and the length of the unsevered fibres remaining in the planes of the offset. On the other hand, the curved or arched supports over the smaller door and window necessitated too great an offset for the length of the remaining fibres with the result that both of these knees are cracked. It is for this reason that designers who have a more clearly logical faith, refuse to make curved structural elements. The curved or arched form belongs to stone. On account of the suggestion of earlier examples of architecture, or on account of its pure beauty of line the wooden structural arch was introduced. There are many of them in England. We must acknowledge, however,

that it is not reasonable to cut away the good fibres from a strut or other piece of timber at the very point where they are needed and such carpentry is almost sure to result in cracked beams that later on require strengthening.

The detail of the Abbeville house shows the useless and useful parts of the curved timber. The upper corner is merely fastened onto the rest and the cracking of the lower end has thrown the thrust unreasonably high and has forced over the head of the door. In spite of this the detail, indeed the whole courtyard, is a very lovely piece of work. Once more notice the contrast between the flatter, more repetitious quality of the panels and the brilliant high relief spots over the door, the statue and canopy. Unfortunately, the figure that stood on the left hand jamb is gone. As in the St. Denis choir stalls another degree in the sequence of effects is obtained by the open work of the tracery. In that, curves abound, but they are purely decorative and have no structural duties to perform.

A very sane and reasonable use of wood timbers is shown on page 27, a house at Noyon in Northern
(Continued on page 43)



Portion of the Maison de Francois I, Abbeville.

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Detail in Parge House, Home of Frederick Sterner, Architect.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE OF DESIGN

CLASS B. PLAN PROBLEM. PART XII.

Rendering

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive.—Ed.

IN RENDERING the analytique a "monotone" is required; for the class "B" plan problems there is no such stipulation, so a color rendering is permissible. For many of the problems a monotone rendering is most suitable—for a formal problem in which the scale of the plan and elevation leaves little of the area of the mount for setting,—but for others, such as the "Dairy Farm" of Figure 174 (October), or the "Spring House" of Figure 99 (October, 1921), or the "Small Private Museum" of Figure 113 (December, 1921), a rendering in color may be more appropriate—more suitable to the character of the program.

There is another reason for doing some of one's "B" Class rendering in color and that is to prepare for later work—for archaeology projects, for class "A" work, especially for the decorative problems, and for the prize problems and sketch problems. For these one has to learn how to handle color ultimately, so it is well to begin early, for in this, as in many other things, one learns most by one's own experience and by the amount of practice one has. It is better to spoil a class "B" problem—to learn something about rendering color, than to make a first trial of color on a well studied class "A" problem, if that is the alternative. If one has a few examples of good renderings about—if not originals, then reproductions in color of some color renderings (there have been many such published, in the magazines and catalogues of exhibitions), his first attempt need not be a failure, especially if the student can see where his rendering is not a great success and with a sponge and water sop out these parts and work over them again.

I need hardly say that a good rendering—whether in monotone or color—requires time, the first rendering with a new medium especially; for most men a color rendering requires more time than one in monotone for obvious reasons. The schedule disposing of the time

given for a problem, as outlined in Chapter 2, on the Order Problem (March, 1921) and again referred to in the early chapters of the Class "B" plan problem, should be made out with this in mind, allowing the rendering of at least one drawing, the one in which rendering plays the biggest part in the presentation, to be started a full week before the date the problem is due. This is usually the elevation, but may be the plan. If this drawing is ready for rendering, inked in, cleaned down and shadows cast, on the Saturday afternoon a week before the date of "rendu," then that afternoon and the Sunday and the succeeding Saturday afternoon and Sunday may be used; all with daylight and for a color rendering daylight is essential for good color effects, especially in regard to yellows of all kinds, or other colors mixed with yellows. The evenings of this week may be used for finishing the other drawings, ready for rendering, and for the mechanical portions of rendering, the ruling pen shadows, accents, back shadows, etc.

These remarks apply more especially to the atelier man, he who works in an office from nine to five and has no daylight for his atelier work except Saturday afternoon and Sunday. The man in a college or technical school is more fortunate in this matter. He can start to render his first drawing on the Thursday afternoon preceding the rendu and have ample time to make a good finish. In this, as in every other branch of the pursuit of knowledge, the knowledge comes largely with experience, from ac-

tual experience, and of course the man who habitually leaves but one day to render is not apt to become proficient.

We must always keep in mind that the main purpose of architectural rendering is not to make a pretty picture, but to make a conventional drawing intelligible, to interpret it. When rendering is applied to geometrical drawings (i.e., plans, sections and elevations)

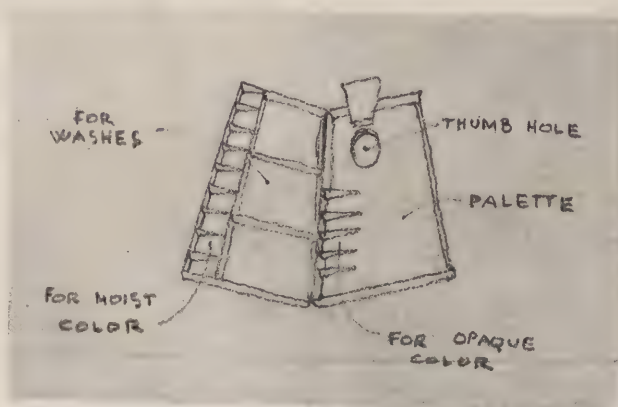


Figure 183. Water Color Box.

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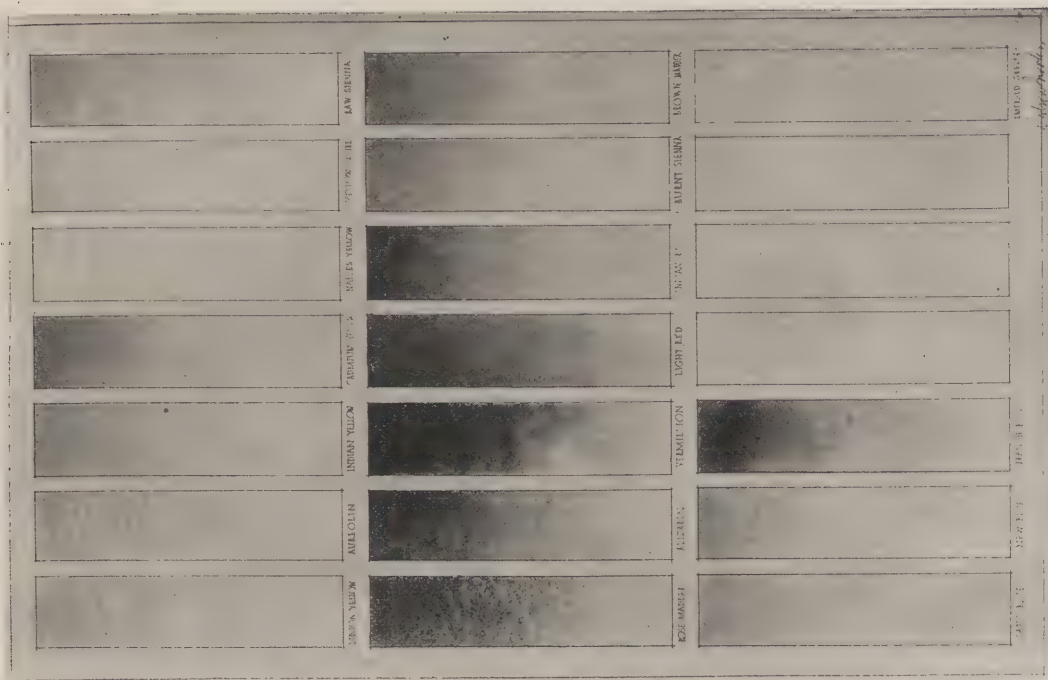


Figure 184. Graded Washes of Water Color.

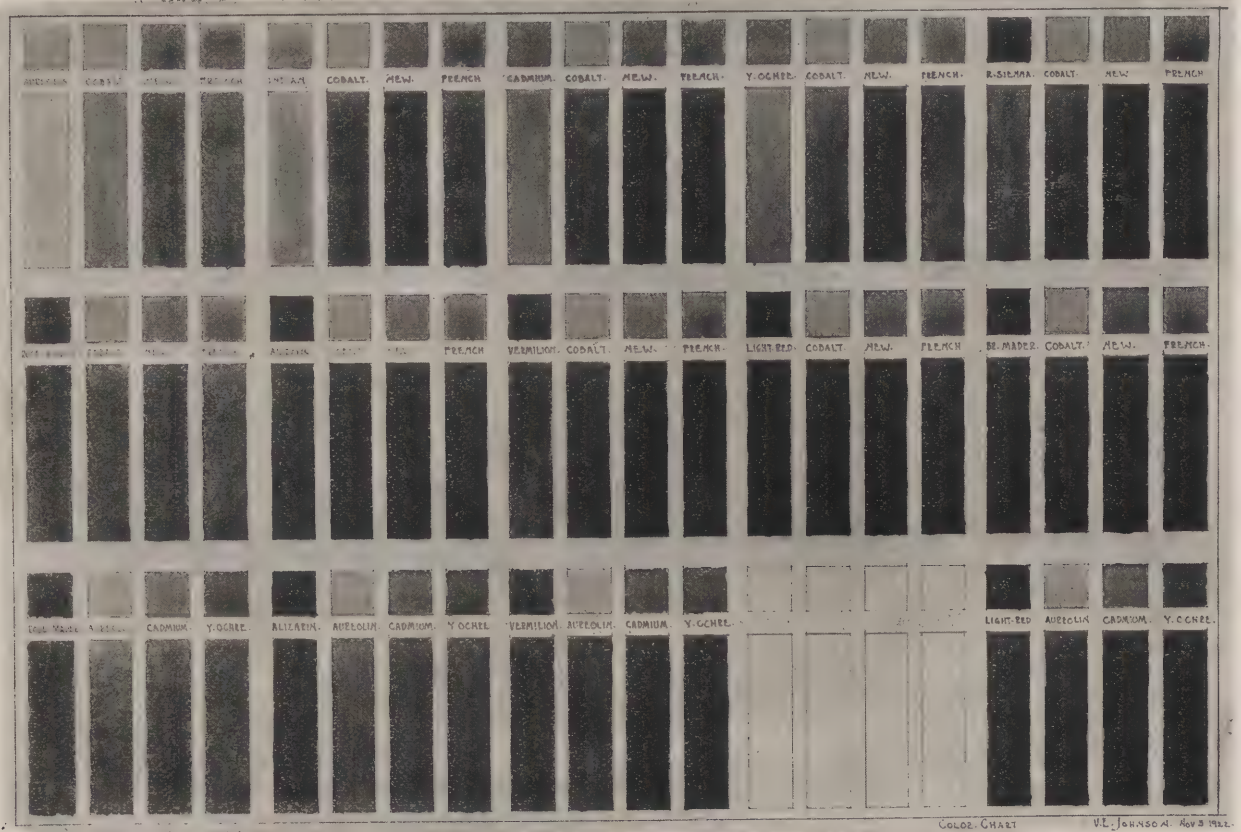


Figure 185. Superposed Washes of Water Color.

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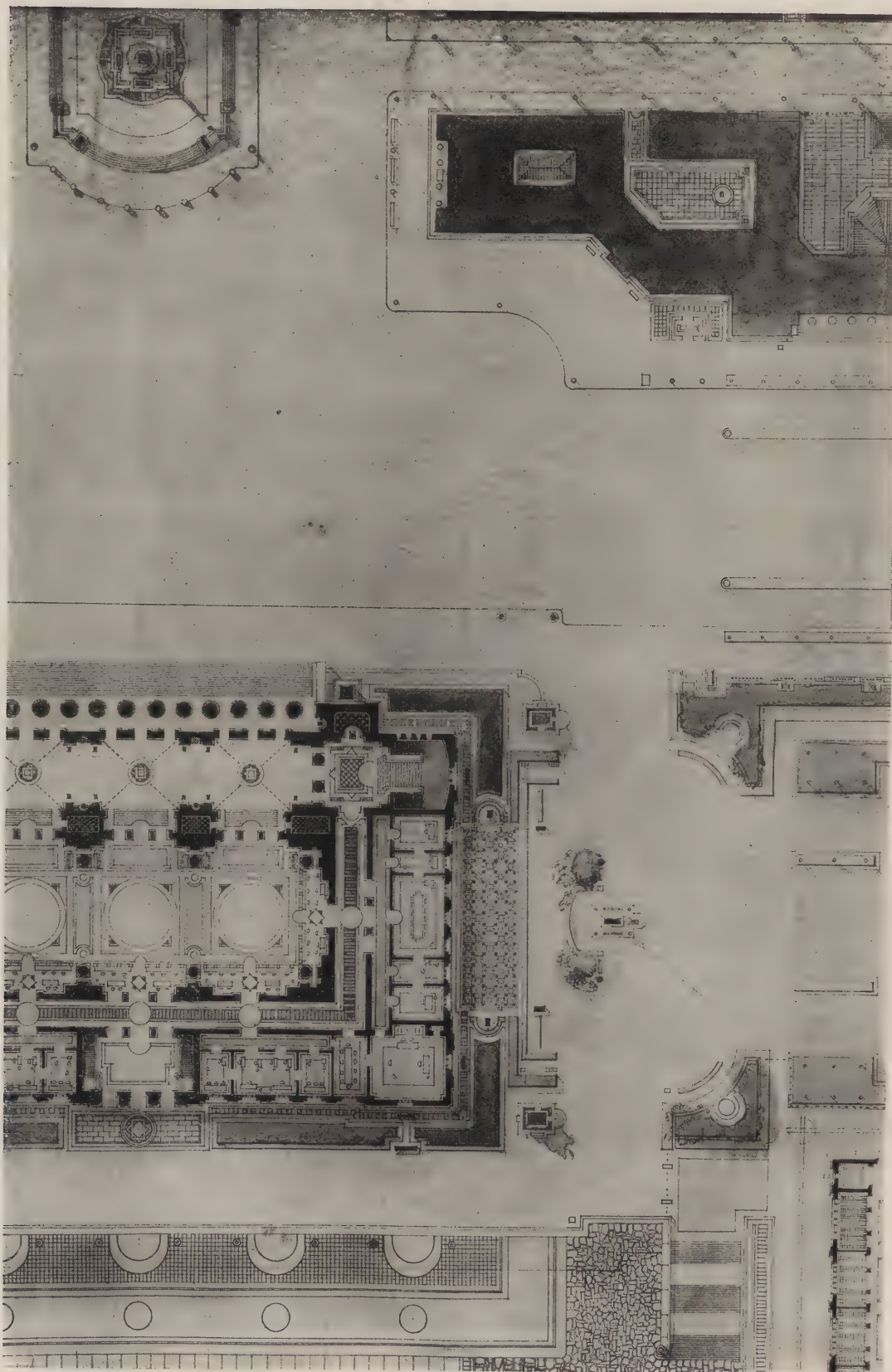


Figure 187. Portion of a Plan for a Custom House, by John F. Harbeson.

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Figure 186. Portion of an Elevation by John F. Harbeson, Second Prize, Friends of Young Artists Competition, 1915.

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it must partake of the conventionality of these drawings.

As we said before, the first condition of a good rendering is that it be applied to a good drawing. This means not only the elevation (or plan) itself; the entourage must be well drawn. In general, geometrical drawings do not require a great deal in the way of accessories or surroundings, and if the trees, mountains, perspective foregrounds are not *studied and carefully drawn*, it would be better to have a simple graded wash. When trees, etc., are used they should be drawn nearly geometrically, so as not to conflict with the lines of the façade and they must be drawn carefully, studied first in charcoal to get an idea of their value in relation to the façade, then drawn on the final drawing with the same care as the architectural features.

Shadows must be neatly drawn and appear accurate. In many small scale drawings the main shadows are approximately correct but the small ones are grossly exaggerated, so that the projections tend to a dull uniformity, when all refinement in mouldings is based on a variety in projection. With the drawing finished, and shadows cast, we are now ready for the rendering proper.

First as to pigments:* there are many colors manufactured. Of these some are very beautiful, but fade in time or react chemically when mixed with other pigments, causing a change in color. The following list of pigments gives a palette that will cover all needs, and is made of lasting colors:

	Lemon Yellow—(greenish yellow)	
	*Aureolin—(pure yellow)	
YELLOWS	*Indian Yellow	(Successively redder yellows)
	Cadmium Yellow, pale	
	Naples Yellow	
	Yellow Ochre	
	*Raw Sienna	
	*Burnt Sienna	(Reds successively less yellow)
REDS	Indian Red	
	*Light Red	
	Vermilion	
	*Alizarin Crimson	(red)
	Pink Madder	
	*Brown Madder—(bluish red)	
	*French Blue—(reddish blue)	
	New Blue	
BLUES	*Cobalt Blue—(pure blue)	
	Prussian Blue (greenish blues)	
	Cerulean Blue	
	Emerald Green	
	*Ivory Black	
	*Chinese White	

It will be noted that these colors are arranged in color sequence, and they may be so arranged in the color box, so that one comes in time to run instinctively along the line of colors until reaching the

Note.—In this connection the student will find interesting the chapter on "The Properties of Pigments" in H. Van Buren Magonigle's "Architectural Rendering in Wash."

exact tint needed in a mixture. This is quite a complete palette; one can get along entirely satisfactorily in rendering with those of the list marked with an asterisk, for from the pigments so marked any color can be mixed if one knows his pigments.

The box best suited for the architect's work, rendering and outdoor sketching, is a French box made by Chapron, Coqueling in Paris, and shown in Figure 183. I consider this box the best because the colors are bought and the reserve supply kept in tubes so that the colors are always soft and usable and the reserve does not "dry out"; the colors as squeezed out are in triangular compartments, so that the brush may get at the color from the end where there is no wall to wear it out; and also, these boxes are convenient to hold, having a hole for the thumb, are convenient to carry and convenient to use, with pans on one side for mixing small washes (for big ones saucers or glasses are used) and a palette on the other side for mixing accents and small tones. The two halves are hinged to fold on each other when not in use.

As there are not enough compartments on one side for all the colors in the palette suggested, it is convenient to put the more opaque colors, the colors with a heavy body, over in the compartment on the palette side, as they are seldom used in washes, most often in small tones or accents. Thus there would be placed on that side lemon, cadmium and Naples yellow, Indian red and vermillion, cerulean blue and emerald green. The ivory black need not be put in the box at all. A small bit may be squeezed on the palette when it is needed in rendering for it is never used for out-door sketching and as Chinese White is quite useless when it has dried, it too is left out of the box and a bit squeezed on the palette when needed.

Having these colors, it is well to get acquainted with them. This can best be done by taking a day or two between two problems and making two sheets of washes, the first as in Figure 184, laying off a number of rectangles and then running in each a wash of one of the pigments, graded from dark at the top down to light at the bottom, by adding more and more water, preferably in the sequence of the list of colors given above. In Figure 184 there are no washes of Prussian blue, cerulean blue or ivory black, but it would be well to include these on the sheet. After making such a sheet, compare it with the one reproduced in Figure 188 to realize how blues always photograph, and reproduce, much lighter than their true color and yellows much blacker.

Then lay out another sheet as in Figure 185. In the first group of four squares and four rectangles lay a wash of aureolin, a heavy flat wash in the square and in the rectangles a wash graded from dark at the top to light at the bottom. Leave the first square and rectangle in that way and over the second put washes of cobalt blue, over the third of new blue, over the fourth of French blue. In each case put a flat dark wash over the yellow in the square and in the rectangle a wash graded from dark at the top to light at the bottom. (In the

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figure only flat washes were used; graded washes are of much greater value, however.) In the second group of four spaces put similar washes of Indian yellow, in the next of yellow ochre, and in the last to the right of raw Sienna. Now in each group, as in the first, run washes of cobalt, new and French blue successively, over each second, third and fourth square and rectangle. Then start on the second line with the reds, put washes of rose madder, alizarin, vermillion, light red and brown madder and again put the superposed washes of cobalt, new and French blue. In the third line try the combination of reds and yellows, putting washes of the reds as before and then running washes of aureolin where the cobalt was run in the second line, cadmium in place of new blue, and yellow ochre in place of French blue.

In this way you will try the combination of your yellows, reds and blues; in all your work it will be better to get the color you want by mixing two pigments, not more, and with this palette that can be done and you will very quickly get an idea of what tone any two colors will give when mixed in any proportion. In this way you will be able to avoid dull browns and "dead" colors.

With such a knowledge of color you may now try a color rendering and I would repeat what I said when speaking of rendering the analytique (August, 1921). (a) Proceed in an orderly process, carrying all parts of the drawing at the same stage of completion in successive steps. (b) Run all the big washes first and gradually work down through the smaller, though big washes may still be used from

time to time to "pull the rendering together" if it is disjointed. (c) Keep neat edges to all washes. (d) Put a tone on each part of the drawing at the start, shadows, foregrounds, the various planes of the building, roof, sky, and do not expect to get the exact value or color in the first wash. (e) All washes, all tones are best graded, whether shadows, planes of the building, roofs, foregrounds. (f) Model all rounded surfaces; remember to differentiate high light and half tones as well as shadows. (g) Focus the rendering at the principal plane; in the monotone rendering this was done by means of washes of varying depth, all of one color. In the color rendering, surfaces of the same color become more blue as they are further away (because of the action of the atmosphere) and are warmer in color as they are nearer; but in a color rendering, as in a

monotone, the contrast between surfaces in light and the same surfaces in shadow, is greatest on the principal plane, the plane of "focus," and this contrast becomes less marked as planes recede from or come forward of this plane. (h) Do not forget the "reflected" shadows (even in a small scale drawing) or the ruling pen shadows. See Figure 186. The use of ruling pen rendering and rendering by small tones in a color rendering in plan is shown in Figure 187. (i) Study effects as they occur in nature, on buildings and in the landscape. Study renderings, the actual renderings wherever possible, but also reproductions. Figure 188 is a very clever one; there are many even in student work worthy of study. And finally, *render* as much as you can; on your own prob-

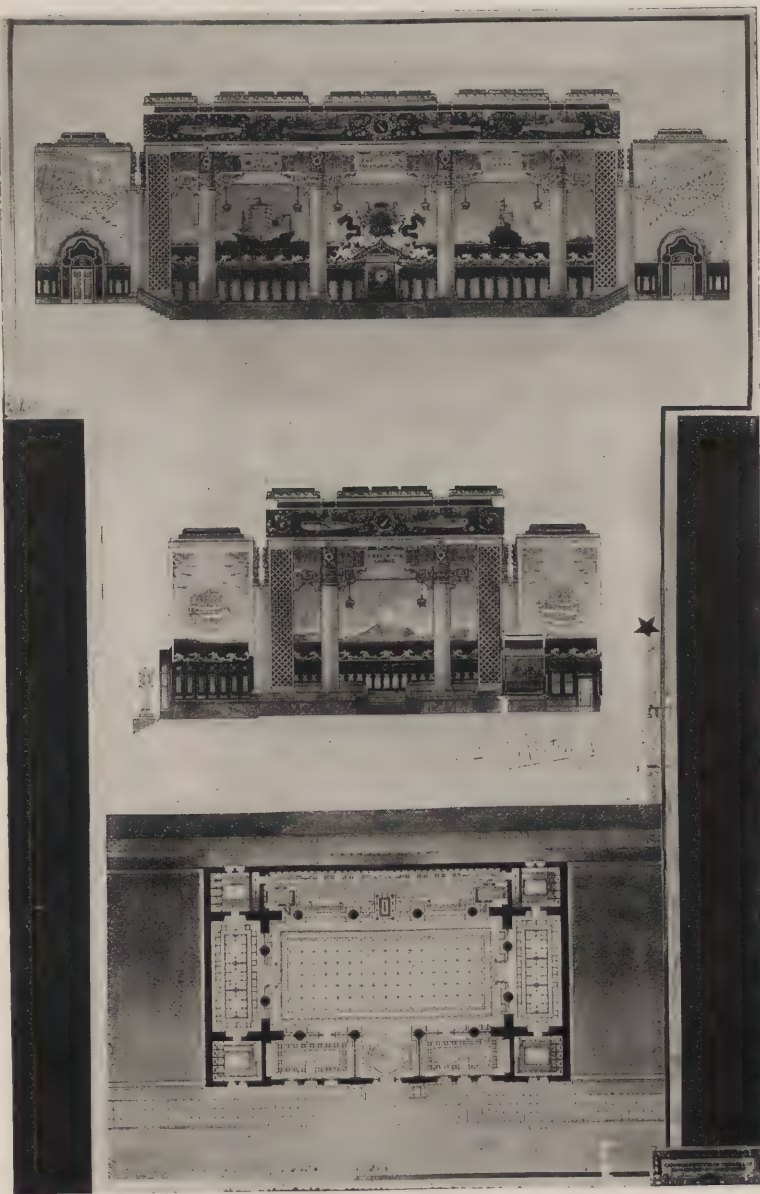
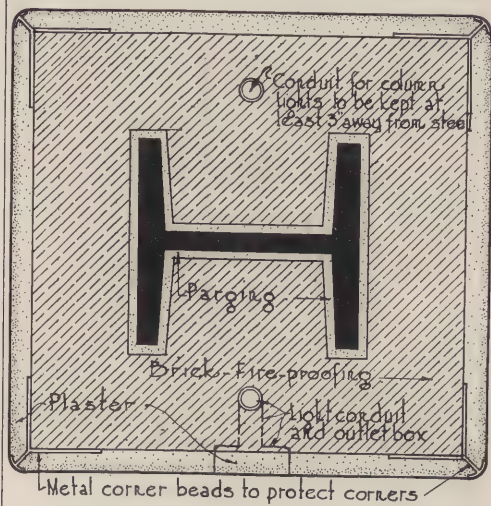


Figure 188. *A Steam Ship Office, C. E. Silling, Carnegie Institute of Technology.*

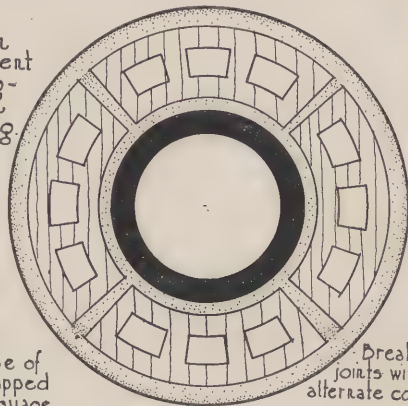
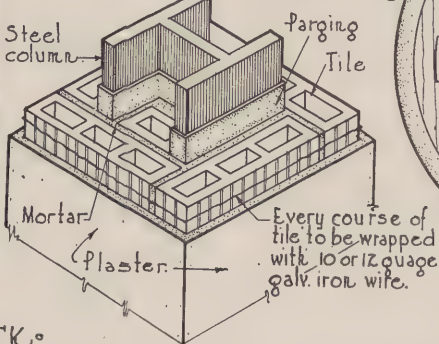
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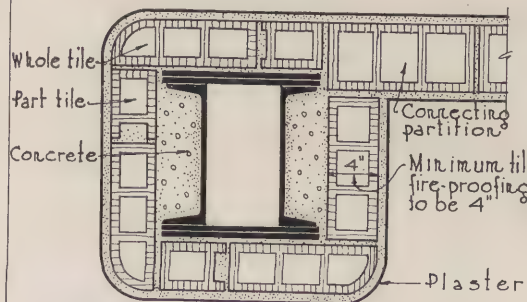
H. COLUMN ENCLOSED WITH BRICK.
Scale $1\frac{1}{2}" = 1'-0"$.

Building code to be consulted in conjunction with fire-proofing details.

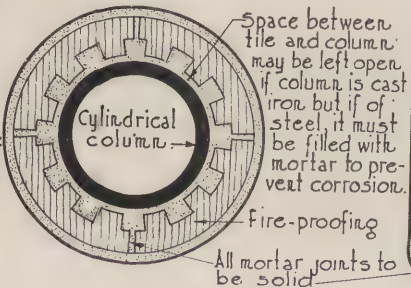
Paint all columns with coat of cement. to prevent corrosion of steel. Painting to be applied 2'-0" in advance of fire-proofing.



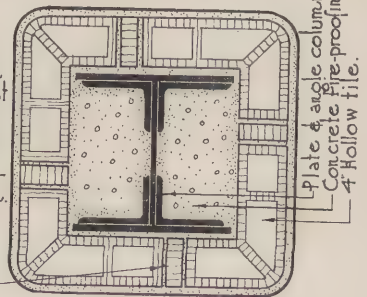
SEGMENTAL • HOLLOW • TILE •
COLUMN • FIRE • PROOFING •
• Scale $1\frac{1}{2}" = 1'-0"$ •



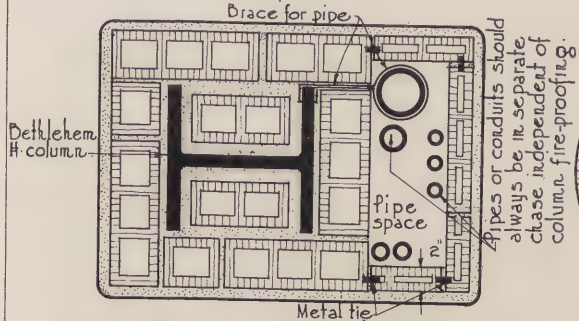
STEEL COLUMN ENCLOSED WITH
HOLLOW TILE • ROUNDED CORNER
• Scale $\frac{3}{4}'' = 1'-0''$



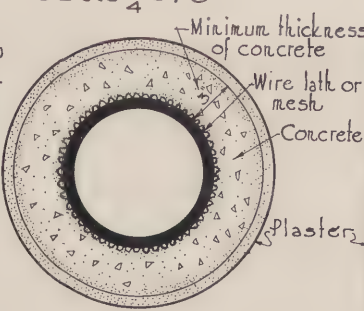
• TILE • MADE •
IN • SEGMENTS •
Scale $\frac{3}{4}" = 1'-0"$



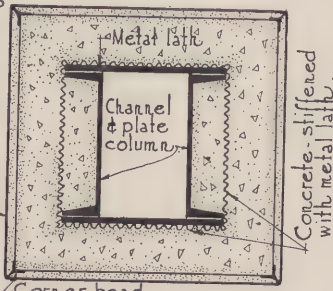
HOLLOW • TILE • CORNERS •
SLIGHTLY • ROUNDED •
• Scale $\frac{3}{4}" = 1'-0"$ •



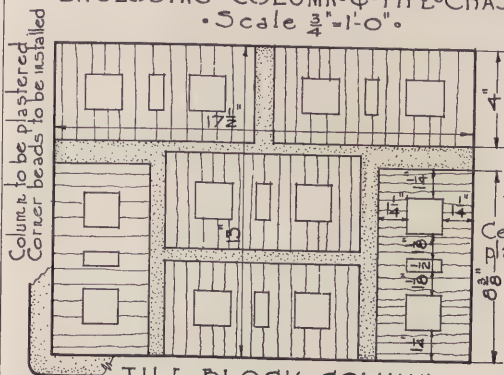
HOLLOW TILE (REGULAR SHAPES)
ENCLOSING COLUMN & PIPE CHASE
• Scale $\frac{3}{4}" = 1'-0"$



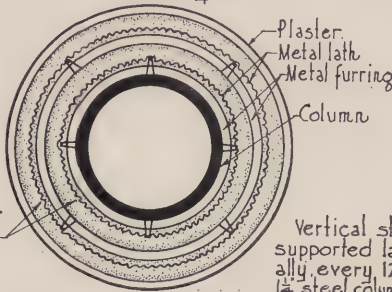
CONCRETE ENCLOSURE.
Scale $\frac{3}{4}'' = 1'-0''$.



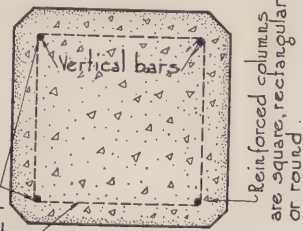
CONCRETE ENCLOSURE
Scale $\frac{3}{4}'' = 1'-0''$



TILE BLOCK COLUMN.
"Monarch" Scale $1\frac{1}{2}" = 1'-0"$.



- COLUMN WITH DOUBLE •
- COAT OF CEMENT PLASTER •
- Scale $\frac{3}{4}" = 1'-0"$ •



• REINFORCED • CON-
• CRETE • COLUMN •
• Scale $\frac{3}{4}" = 1'-0"$ •

Details of Fire Resisting Columns, from Philip G. Knobloch's "Good Practice in Construction."

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THE 100 PER CENT. CLUB.

A NUMBER of architects' offices have advised us that every member of the staff is a subscriber to PENCIL POINTS, and we are sure that there are many other 100 per cent. offices. If yours is one, let us know and take your place in the 100 Per Cent. Club. Some offices lack only a few subscriptions of making the grade. If yours is one of these, won't you boost for PENCIL POINTS and make your office eligible. Now, all together.

JOHN STEWARDSON SCHOLARSHIP AWARDED.

OTTO M. OLSEN, a post graduate student at Carnegie Institute of Technology, Pittsburgh, has been awarded the John Stewardson Memorial Scholarship in Architecture, for 1922. In winning this coveted prize for young architects in Pennsylvania, Carnegie Tech. students have won the scholarship for two consecutive years, and three times in the last five years. H. L. Rubin won it in 1917 and Russell F. Simpson was the holder last year. Of the seven highest ranking applicants, Carnegie Tech. was represented by three.

The scholarship, valued at one thousand dollars, is a memorial established on the basis of a fund donated by John Stewardson, noted architect of Philadelphia, who died 23 years ago. Candidates are restricted to architects, 22 to 30 years of age, who have completed at least one year's office experience and two years in an approved school of architecture, and must have studied or practised architecture in the State of Pennsylvania for the period of at least one year immediately preceding the scholarship award. The scholarship includes a year's travel in Italy, France, Greece, and Spain.

PERSONALS.

HENRY CALDER THORNE, Registered Architect, has opened an office at 139 East State Street, Sage Block, Ithaca, N. Y., for the general practice of architecture and landscaping.

NOEL CHAMBERLIN has opened an office at 137 East 46th Street, New York City, for the practice of landscape architecture.

THE H. H. WINNER COMPANY, Bank Architects and Engineers, have removed their offices to more suitable quarters, third floor of the Sharon Building, 55 New Montgomery Street, San Francisco, Cal.

I. V. VAN DUZER, Architect, has removed his office from Cazenovia, N. Y., to Room 202, O. C. S. Bank Building, Syracuse, N. Y.

CHAS. C. CORNFELDT, 462 Woodrow Blvd., Toledo, Ohio, has opened an office for the practice of architecture.



LOUIS C. ROSENBERG.

LOUIS C. ROSENBERG, winner of the first prize in the Birch Burdette Long Sketch Competition for 1922, was born in Portland, Oregon, and received his early schooling there.

He began architectural study in the office of P. Chapelle Browne, Portland, Oregon, and later entered the office of Ellis F. Lawrence, to whom he feels largely indebted for whatever success he has gained. Under the direction of Mr. Browne he studied the Beaux-Arts problems in the atelier of the Portland Architectural Club for three years. He then went to the Massachusetts Institute of Technology as a special student for two years, 1912-13 and 1913-14. In 1914 he was awarded the traveling fellowship, but could not go abroad at that time on account of the war. In 1915 he worked in the office of Edward T. Foulkes, San Francisco, and of Proudfoot, Bird & Rawson, Des Moines, Iowa. He kept up the Beaux-Arts work and received first place in the Lezt Prize twice and second place in the Warren Prize in 1916. From 1916 until the fall of 1917 he was assistant to Dean Ellis F. Lawrence at the University of Oregon, in the School of Architecture.

He entered the army and went overseas with the 40th Engineers, Camouflage Section. In 1919-20 he returned to the University of Oregon.

In June, 1920, he sailed for Europe to use the fellowship awarded to him in 1914 at the Massachusetts Institute of Technology. The first year Mr. Rosenberg did mainly architectural research work, such as making measured drawings. The second year he devoted entirely to sketching and etching, spending most of the time in and around Rome, where he studied in the Academy. From the beginning of his studies in Europe Mr. Rosenberg was greatly interested by the picturesque character of his surroundings. The suggestions for interesting compositions, the beauty of the textures, the picturesque people all made so strong an appeal to him that he found sketching much more interesting than architectural drawing.

He returned to New York in August, 1922, and entered the office of York & Sawyer, where he is still employed.

PENCIL POINTS

PRIZE COMPETITION FOR DESIGNS FOR FACE BRICKWORK FOR THE GARDEN.

PRIZES aggregating \$1,550 are offered by the American Face Brick Association for the best designs for architectural features of face brick suitable for the grounds or gardens connected with residences, the competition to be conducted by the publishers of PENCIL POINTS.

The purpose is to stimulate a wider interest in the designing of such features and to secure designs that will afford helpful suggestions for the use of this material.

The prizes offered are: First prize \$500, second prize \$300, third prize \$150, fourth prize \$100, and ten prizes of \$50 each.

The Jury of Award will consist of five architects representing different sections of the country. The judgment will be held in Chicago. The competition is open to all architects, architectural draftsmen, architectural students, and all others desiring to compete.

All drawings for entry in the competition must be received at the office of The Pencil Points Press, Inc., in New York, before noon, February 5, 1923. Full particulars of program will be found on another page of this issue, or will be sent upon request.

ONE HUNDRED DOLLARS FOR A LETTERHEAD DESIGN.

THE Sumter Brick Works of Sumter, South Carolina, manufacturers of Airedale Brick, have announced that they will pay one hundred dollars for the best design of a letterhead. Full information can be secured by addressing Mr. Irving Ryttenberg, President, Sumter Brick Works, Sumter, South Carolina.

Below is reproduced an attractive little announcement issued by the St. Louis Architectural Club for its Thanksgiving Dance. This announcement is a blue print about 8¼ x 9¾ in.



WALTER C. SHARP.

WALTER C. SHARP, President of the Dallas Architectural Club during the present or third year of that organization's life, was born in Madison, Tenn., in 1884. He is the son of the late Robert Sharp, F. A. I. A., of Nashville, in whose office he received his early training in architectural work. After a preliminary education in the public schools of Nashville, he attended the University of Pennsylvania, finishing in 1909. He later worked in the office of Grosvenor Atterbury, during which time he was a member of the Atelier Donn Barber.

Returning to Nashville, Mr. Sharp joined the office of Dougherty & Gardener. In 1919 he went to Texas, entering the office of the Herbert M. Greene Company, Architects, Dallas, where he has been since that time in the capacity of chief draftsman. Aside from his work in architectural offices, Mr. Sharp gained valuable experience in the building industry through his employment in the offices of several building material and contracting firms in Nashville, as well as through his work during the war as a supervisor of construction at the "Old Hickory Powder Plant."

Mr. Sharp is a charter member of the Dallas Architectural Club and his election to the executive office followed his efficient work as the club treasurer during the past year.

COMPETITION FOR THE HOUSE BEAUTIFUL COVERS.

TWO prizes, one of \$500 and one of \$250, will be awarded to the successful contestants in a competition for covers for *The House Beautiful* magazine. The competition will close February 10, 1923. Other particulars of the conditions to be observed may be found in the November or December issues of *The House Beautiful*, or may be had upon application to the Competition Committee, 8 Arlington Street, Boston, Mass.



In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, 19 East 24th Street, New York City.

Questions—I am a student in a school of design, and am learning poster work and commercial art. As I have considerable lettering to do, will you kindly give me the name of a book on lettering that would be useful to a student like myself? E. E. S. **Answer**—We believe that you will find the following books helpful to you: "Alphabets Old and New," by Louis F. Day, \$3.00; "The Alphabet," by Frederic W. Goudy, \$6.00; and "The Elements of Lettering," by Frederic W. Goudy, \$5.00. The book by Louis F. Day mentioned contains a great variety of alphabets. The "Elements of Lettering" is a manual for the art student and craftsman and is intended to present clearly and simply the fundamentals and essentials of our familiar letter forms, not so much how to draw them as to consider what they are—to view them in their essential aspect.

Question—Can you tell me of some good treatise on the architecture peculiar to the different periods? I know of so many elaborate works on the subject, but what is wanted is something that will give a few fundamentals the average salesman of lighting fixtures can grasp, and thereby make it possible for him to more clearly comprehend the idea the architect has in mind when he comes in contact with him. A very deep presentation of the subject would discourage the average salesman, unless he had had some training in this line, but if there is something simple that would hold his interest for a sufficient length of time to read it through, I believe it would be an immense help to him, and I should like to know about it. P. W. T. **Answer**—The most directly applicable book for the purpose you have in mind is in our opinion, "Period Furnishings," by C. R. Clifford. It is very fully illustrated, concise and interesting, it gives in a simple, clear way, an understanding of the differences between the furnishings of the different periods and the reasons as well as the earmarks. It is published by Clifford & Lawton, 373 Fourth Avenue, New York City. Old edition \$6.00 postpaid. New edition, 1922, \$7.50 postpaid. For a general understanding of the periods of architectural development from the earliest times we suggest the simple treatment of the subject in "Architectural Styles," by Rosengarten, \$2.50. Published by Charles Scribner's Sons, New York City.

THE BIRCH BURDETTE LONG SKETCH COMPETITION FOR 1922.

(Continued from page 11)

jury has given just as careful consideration for the prizes to the sketches in other mediums, and wishes to recommend and encourage the use of all mediums—water color, oil, wash, lithographic pencil, pen-and-ink, etching, and any other mediums that may be found available, and more particularly the broad and simple indication of subjects in water color, trying not for striking effects of technique, but endeavoring to convey a sense of the subject with the least effort, so that at a little distance the general impression is that of a complete statement without undue labor.

The art of sketching is of invaluable assistance to the architect for the purpose of recording what he sees, for the purpose of stimulating his observation and for the purpose of recording his thought and conveying it to others. Sketching accomplishes these purposes where a labored drawing may not do so. Reference to the works of the old masters conveys this lesson constantly. The impressive preliminary sketches made by Michael Angelo, Leonardo da Vinci, Perruzzi, San Gallo, Bramante, and others, recording what they have seen or what they wish to express, are of vital interest, no less than the great completed works of these masters. In the sketch one feels the personality of the individual. The impression is recorded with full force undiminished by mechanical difficulties and the labor of producing a finished drawing, the result being greater brilliancy, a greater forcefulness than would otherwise be possible. While this jury recognizes the absolute necessity for thoroughly studied and carefully made drawings, and believes that such drawing is essential to the finest final development of the art, it is felt that, nevertheless, the forceful graphic sketch conveys the essence of thought and strikes, as it were, an electric spark that fires the imagination and carries an elemental force from which the carefully worked out and studied drawing may derive its ultimate merit.

The committee reports its recommendations as follows: First Prize (\$100) awarded to Louis C. Rosenberg, of New York; Second Prize (\$50) awarded to Lionel H. Pries, of San Francisco, Cal.; Third Prize (\$25) awarded to J. E. Jackson, of Abington, Pa.; Fourth Prize (\$15) awarded to Keck (Initials unknown).

Six prizes of ten dollars each were awarded as follows: To George A. Gibbons, of Philadelphia, Pa.; to I. T. Cronin, of New York City; to E. Maxwell Fry, of Liverpool, England; to G. G. Gilkison, of Pittsburgh, Pa.; to John Craig Janney, of Germantown, Philadelphia, Pa., and to Edward J. Weber, of Pittsburgh, Pa.

The following men received Honorable Mention: Louis C. Schallalos, of Los Angeles, Cal.; Edward H. Wigham, of Philadelphia, Pa.; Gerald K. Geerlings, of New York City; Meade A. Spencer, of New York City; Wilson R. Stewart, of Rochester, N. Y.; J. Louis Schillinger, of Birmingham, Ala.; Hugh Perrin, of Brookline, Mass., and Robert A. Lockwood, of Chicago, Ill.

The committee expresses its appreciation of the great service to the profession which has been rendered by Mr. Birch Burdette Long in establishing these prizes and believe that the influence of these competitions has already been most beneficial to the profession and especially to the younger men. The jury expresses its appreciation of the work of PENCIL POINTS in conducting these competitions.

ANNUAL DINNER OF YORK & SAWYER'S OFFICE.

THE annual dinner of the office of York & Sawyer will be held at Delmonico's, Fifth Avenue and Forty-fourth Street, New York, on the evening of December 21. This will be the third occasion of the kind.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION

PART IX.

BY OTTO GAERTNER.

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Garages (Continued)—In late years a new type of garage that has found much favor is one that is unique in that it has its area divided into two or more units or sections, so arranged that the floor levels in one section are staggered with those in the next. Such a type is well adapted to buildings of more than one story in height and exceeding fifty feet by one hundred feet in area. Its patented system of staggered floor levels has been used to overcome many special conditions of site and construction. For instance, such a system is often advantageously used where an addition is made to an existing garage or to a building that is being converted into a garage, by staggering the floors in the new section with those in the existing building.

The floor levels are connected by means of ramps which may be either straight, curved, or having a right angle turn, as may be best suited to the conditions met in the plan and as will sacrifice the least amount of floor area or car storage space in their installation. The ramps connect the aisles of one unit with those of the next, and since they rise only one-half of a story at a time, only a short ramp is necessary to reach from one level to the next. This short ramp can more easily be provided for in the plan than the usual longer ramp. Such a ramp having a satisfactory grade is usually found to be only slightly longer than the space needed for two vehicles.

The ramps should be placed on the centre, unlighted portions of the floor area, leaving the outer, well-lighted spaces for the more important working spaces or automobile storage. This has the added advantage, in case of necessity, of using the entire spaces on either side of a ramp, inclusive of the main aisles, for car storage space without interfering with the inter-floor traffic. Such a condition is especially desirable in garages where all the cars will leave at about the same time in the order in which they are freed; for instance, in a delivery truck garage connected with food and merchandise distributing companies. And if desirable, only the space to one side of the ramp need be so used while the other may be used in the customary way with a wide access aisle between the rows of stored cars. Of course, this storage feature holds good regardless of whether the staggered floor system is used or not.

But to dwell further on the staggered floor system, a few further advantages may be cited. On account of the short ramps it is well adapted to small buildings, most public and commercial garages being large enough to accommodate them. With the length of a ramp as already mentioned, and its width, including curbs and walls, about the same as the width required by two cars, the storage space for eight cars is sacrificed for the ramp and twice that much for two ramps to provide a traffic way for one entire story height. But a single elevator with its approach would require about the same amount of space as is needed to store six cars, and in an elevator garage additional space is needed for stairs and if there are two main aisles, additional space is needed for a connecting passage way between them. Therefore, with the ramp doing double duty as passageway between aisles and as traffic way for vehicles and people, the stairs and elevator may be omitted and about the same amount of car storage space is sacrificed in the staggered floor scheme as in the elevator scheme and often less. There is no question about the saving over a garage with two elevators.

The staggered floor system also has the advantage of having a fire-wall between the sections so that automatic, self-closing fire doors placed on the face of the fire wall will retard the fire even if the ramps are not enclosed with walls. In the ordinary building, the ramps are generally enclosed by walls and the fire doors occur at the ends of the ramps. Such ramps do not permit chauffeurs to see the surrounding floor spaces, making driving dangerous and difficult, whereas the unenclosed ramps give complete visibility and insure maximum safety to the cars, building and employees.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Bank Buildings, Vol. 4 of the Indiana Limestone Library, Series B.—Profusely illustrated brochure with plates in sepia illustrating various types of bank buildings from all parts of the country. Descriptive text. Notes on design of bank buildings, equipment and facilities. 64 pp. 8½ x 11 in. Indiana Limestone Quarrymen's Assn., Box 784, Bedford, Indiana.

Mantelpiece Designs—Six plates in pen and ink showing six types of mantelpieces with surroundings done in Indiana Limestone. 8½ x 11 in. Indiana Limestone Quarrymen's Assn., Box 784, Bedford, Indiana.

Fuel Lifts—A service booklet for the specification writer describing in diagrams and text a type of equipment designed to bring fuel to the fireplace with a minimum of labor and without scattering dirt through the house. Sedgwick Machine Works, 158 West 15th St., New York City.

"Sterling" Transits and Levels—Booklet illustrating engineering field equipment, drafting room furniture and drawing materials, price list. 32 pp. 4½ x 7. Warren-Knight Co., 136 N. 12th St., Philadelphia, Pa.

Havemeyer Forms—Bulletin illustrating removable metal forms for joist construction, illustrated, detail drawings and dimensions. 8 pp. 8 x 10¼ in. Concrete Steel Co., 42 Broadway, New York City.

Elevator Door Efficiency—Illustrated catalog showing various types of elevator doors, detail drawings, specifications, safety appliances, etc. 48 pp. 8 x 10¼ in. The Peelle Co., Brooklyn, N. Y.

Celotex Insulating Lumber—Uses, sectional drawings, specifications and sample. 44 pp. 8½ x 12 in. The Celotex Co., Chicago, Ill.

American Gypsum Blocks—Illustrated booklet showing methods of manufacture and application of this material. Sectional drawings. Specifications. 32 pp. 8½ x 11 in. American Cement Plaster Co., St. Louis, Mo.

Pump Specifications—Outline specifications covering house pumps, pneumatic water systems, return line vacuum pumps, sewage ejectors, etc. Handy pocket size. 12 pp. Chicago Pump Co., 2300 Wolfram St., Chicago, Ill.

The Wood Eternal—No. 1 of the Pocket Cypress Library. Descriptions of grades and uses. 3¼ x 5½ in. 48 pp. Southern Cypress Mfrs. Assn., New Orleans, La.

Power Plant Equipment—Catalog 44B—Illustrated catalog of Hydromatic steam traps, air traps, exhaust heads, centrifugal separators, steam separators, horizontal oil separators, hydromatic valves, all service feed water heaters, rotary ball-bearing ventilators. Data and dimensions. 7½ x 10½ in. 32 pp. Also Ventilation Data Card. The Ohio Body and Blower Co., Cleveland, Ohio.

The New Curtis Adapter—Catalog 3000. Engineering data showing sizes of this specialty and uses in solving lighting problems. 8 x 10½ in. National X-Ray Reflector Co., 235 W. Jackson Blvd., Chicago, Ill.

Sheet Metal Bulletin—Leaflet announcing the manufacture of a number of items of expanded metal specialties in zinc and copper. Data on corrosion. Illustrations in color. Specification data. 6 pp. 8½ x 11 in. Milwaukee Corrugating Co., 36th Avenue and Burnham St., Milwaukee, Wis.

Atlantic Terra Cotta—No. 7 of the series illustrating details of Luca della Robbia. 16 pp. 8½ x 11 in. Atlantic Terra Cotta Co., 350 Madison Ave., New York City.

How to Get Best Results from Gypsum Plaster—Booklet telling how to prevent and remedy Gypsum Plaster troubles. 32 pp. 3¼ x 7 in. United States Gypsum Co., 205 W. Monroe St., Chicago, Ill.



PENCIL POINTS



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ARCHITECTURAL DETAIL, PART XIX.

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France. This interesting piece of architecture dates from the Fifteenth Century. Here the diagonal supports are straight struts instead of imitation arches and they stand as firm today as when they were built some five centuries ago. There is a nice contrast in the spaces defined by the horizontal braces of the second story and the shadows resulting from the projection of the second story and roof sills give warmth and interest to the design. The carved girder ends, corbels and escutcheons, are varied and the shadows they cast intensify the pleasing effect of the whole.

THE STUDY OF ARCHITECTURAL DESIGN.

(Continued from page 36)

your own problems—do the sketch problems—help the men doing the analytical, "nigger" for the class "A" men. Men who play football, baseball or chess, or a musical instrument, and play well, practice incessantly; the same is true of men who render well.

This concludes the series of articles on the Class B Plan Problem. Succeeding articles will take up the study of the archaeology and measured drawing projects and the Class B. Sketch Problems.

PRACTICAL EDUCATIONAL ACTIVITIES.

THERE is a practical character to the activities of the Committee on Education of the Washington State Chapter of the American Institute of Architects as detailed in the committee report published in a recent issue of the *Monthly Bulletin* of the Chapter. A few of these activities are as follows: A beginning has been made in the development of a Museum of Materials, which now consists of samples of mouldings, tile, metal corner beads, metal lath, and some other building materials used in small house construction. The Manual Training Department of the schools has cut the moulding into short lengths, mounted and labeled it. It is understood that each school has some of this material.

An exhibition of college work from the Massachusetts Institute of Technology and the University of Pennsylvania is on view.

To Architects, Draftsmen
and Students

IF you desire to add valuable items to your portfolios of plates and reference material, we invite you to call at our offices, 19 East 24th Street (seventh floor), and inspect our stock of early issues of the *ARCHITECTURAL REVIEW*. No complete years are available, but the forty-five different issues represented offer a wide range of subjects. Many of these copies are not obtainable elsewhere. So long as they last these copies will be sold at fifty cents each, three for a dollar.

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For complete information see page 2124, Sweet's 1922 Catalog.

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INDICATION IN ARCHITECTURAL DESIGN, by Varon. Second edition—enlarged, 1922. Fifty-eight full-page plates and text cloth, \$6.00. The Wm. T. Comstock Co., 23 Warren Street, New York.

P. M. LYNCH—Blue Litho and Photo Prints,—Drawing Materials; with Central Blue Print Company, 709 Sixth Avenue, New York City. Telephone, Bryant 5450. Prompt messenger service.

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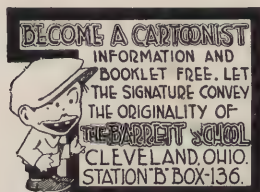
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THE IDEA OF THIS ISSUE

EVER since PENCIL POINTS was started, two years and a half ago, the subject of Specifications has been brought to our notice on many different occasions and from many different directions. With the second issue of our paper we started a department called "The Specification Desk" in which has appeared a comparatively small amount of material which has proved to be of great interest to many of our readers. The specifications, so important in the production of a building, and employing so large a part of the time of architects and specification writers, constitute an extremely difficult document to produce. They are surrounded, in the very nature of things, by a peculiar and complex set of problems, entirely different from anything else found in the practice of architecture.

To say that the specification should be a good specification does not get you very far. Of course it should be. But what is a good specification? How should the matter be approached? How should the work be laid out? How should it actually be done with the greatest economy of time and effort? How can it be safeguarded so that everything goes in that should be in and nothing of importance is omitted? How should the clauses read so as to protect the owner and architect in the matters of quality and price? And how should the specification be drafted so as to give the sub-contractors and the various manufacturers of appliances and materials a fair opportunity to do business? The specification is a two sided document. The interest of the architect and the owner is to get just the quality and amount of materials and workmanship desired. The bidder should be given explicit information on which to base his estimates. Nothing should be vague, nothing should be guessed at, nothing should be left in such form as to invite misunderstandings, disputes, loss of time, law suits and all the rest of the things that try men's souls and make buildings cost more than they should.

In seriously tackling this problem, which is admitted by all to be a big one, perhaps PENCIL POINTS is showing the rashness of youth. At any rate, for better or for worse, the problem is being tackled in this issue, and while we do not expect to revolutionize specification writing over night, we honestly believe that the material in the following pages will accomplish two things: first—lay before the specification writers and before the manufacturers of the country who are interested in specifications a mass of first-hand material and opinions which have never before been published. The contributors to this issue are architects and specification writers of many years' experience and what they have to say reflects a knowledge of specification work gained in actual practice in many parts of the country and in offices of various types.

The contribution from Mr. Jones, representing the Structural Service Committee of the American Institute of Architects, shows the progress made by that committee up to the time of going to press, with certain specific recommendations which, when they

have been assimilated by specification writers and acted upon by manufacturers, will unquestionably lead to a better state of things in many respects.

The article by Mr. Gardiner, who has made a special study of architects' and engineers' specifications for many years, approaches the matter from the standpoint of a manufacturer and sets forth certain ideas which it may not be possible for many reasons to put into practice in their entirety at the present time, but which may develop as time goes on.

This issue of PENCIL POINTS is intended merely as a starter along the road to better specifications. Those who write specifications in one part of the country do not know very much about what their brothers in other cities are doing. This is not so in the case of designers. They see each month in the architectural magazines the work of other designers expressed either in drawings or photographs of completed buildings. The specification writer, in a majority of cases, has quite naturally fallen into the habit of working in a small circle. His specifications for his next building are often taken largely from the specifications for the last similar one, thus perpetuating any bad features there may have been in the original documents. Then, too, many men have worked out ideas that would be useful to other specification writers if they only knew about them. It is our hope that every architect, every specification writer, every draftsman, every manufacturer reading this issue will feel free to discuss any of the questions raised, to ask questions on any points that are not clear, to make further suggestions covering matters not specifically considered in this issue and to submit all such material to us in the form of letters or articles for publication in forthcoming issues of this paper in the "Specification Desk" department. A vehicle is provided in this department for the consideration of all manner of things affecting specifications. It is not our intention or desire to publish material which is merely different in character and which has not within it some constructive and vital element tending toward elucidation and improvement. We all know that there are evils in present-day specification writing. It is our desire that all of our contributors approach the subject in a spirit of genuine co-operation and mutual helpfulness.

In presenting the material to be found on the following pages we have contributions from many good offices. Some others were invited, but were too busy to participate—or thought they were. If any man who has an opinion regarding any phase of the subject was not specifically invited to contribute to this issue we hope that he will not hesitate to let us hear from him. No one has intentionally been slighted but we had to start somewhere, and it was not possible for us either to call upon or reach by letter all of the men whose opinions should be valuable. So, whoever you are and wherever you are, we shall be glad to hear from you if you have a suggestion to make which will be useful in the preparation of specifications.

GENERAL CONSIDERATIONS IN SPECIFICATION WRITING

BY FRANKLIN J. WARD

Specification Writer with Carrère and Hastings, Architects

IN WRITING on "General Considerations in Specification Writing" I feel that it is best simply to give my own experience and opinions and to leave room for others who may differ with me, rather than to attempt a formal and ambitious treatment of the subject. It seems to me that among the most important general considerations are the following: the specification writer's training for his work, the functions of the specifications, the method of their preparation, and the sources of information, such as manufacturers' catalogues, etc. I shall, therefore, speak of each of these matters in as informal a way as possible.

I think the first qualification for specification writing is some experience on a building, superintending or similar work. The fellow who has only occupied an office chair or a drafting stool cannot tell the contractor and the workmen what they want to know. The second requirement is ability to write clear English, which is similar to writing a good business letter.

The drawings should show what is to be done. The specification should tell how to do it. For instance, the drawings may show a brick wall with a slate roof. The specification should tell that the facing is \$35.00 brick laid Flemish bond with bonded headers every sixth course in cement mortar with common brick backing furred with wood strips, and the roof is one and one-eighth inch boarding with paper and $10 \times 20 \times \frac{3}{16}$ inch black slate with copper nails. These details cannot be put on the drawings without confusing them, but anyone of them left out of the specification, (and even more are needed), will leave a doubtful item in building.

I have always, however, found it helpful to have the materials of the floor finish noted on the drawings, as it makes a good reference point for many specification clauses.

There is no use filling a specification with too many words. Government specifications are beauti-

ful in their completeness, but in ordinary building, time is too short to either write or read them. What is wanted is to state as briefly but clearly as possible the choices that must be made in estimating and building. For instance, the above mentioned specification for slate must state the thickness, size and nails, because there is always a choice of those

things, but if the size is given, the amount to the weather is not needed, for they are always laid with three inch headlap and to fill up with clauses about laying to a straight line and not driving the nails so hard as to break the slate, and doubling at the eaves, is a waste of time, for those things are done anyhow, and they only confuse the important facts. Also, frequently interjections are as good as well turned sentences. "Black slate, $10 \times 20 \times \frac{3}{16}$ inch" says just as much as "the slate shall be black, three-sixteenths of an inch in thickness, and 10×20 inches in size." Remember that a specification is a document to be built from, and not a literary composition.

And now how to write the specification. I note in most advice, that the specification writer should be given a week or so after the drawings are done. That would be heavenly.

My experience is generally that the client has been promised this job last week, and the drawings are already behind time, and the specification man just has to hustle and get out his work not more than a day or two after the drawings.

I find it necessary to get a mental picture of the building. Take the drawings and paw them over until you get it. You can't tell some one else what is in the building until you know yourself. This mental picture of the whole job can be made when the drawings are very rough.

Now is the time to think of your divisions. I use the following schedule of trades which you will notice proceeds roughly in the general order of construction: general conditions, excavation, masonry,



Photo Gillies

Franklin J. Ward

PENCIL POINTS

general work, waterproofing, cut stone, architectural terra cotta, steel framing reinforced concrete floors, roofing and sheet metal, ornamental and miscellaneous iron and bronze, vault lights, concrete paving, interior marble, slate and terrazzo, tile, furring and lathing, plastering, carpentry, hollow metal, kalamein, special doors, special floors, hardware, glazing, painting, planting, plumbing, heating and ventilating, electric, elevators.

Now, having the mental picture of the building, select the trades which will be used in it, and list them. I formerly used a sheet of paper for each, somewhat in book form. I now get a long sheet of wrapping paper and make a column on it two or three inches wide for each trade. Take each drawing and note in each trade column any item on that drawing which needs mention. Of course a little practice will let you skip a number of items that you know you will not forget anyway.

At this point I get some previous specification, or several of them, and work out the new one in the general order of the old, interjecting new items from my paper list as they come in their order. Will a "reminder" help at this point? Possibly, especially to the inexperienced, but I have such a volume of back work to refer to that I find the mental picture and the paper list sufficient and better than any reminder.

I do not find many clauses that can be copied without change. I believe anybody that does so is using too many unnecessary words. The items that must be changed each time are the very ones that must be given to show the choices wanted. Each specification is an individual composition. I think that with an immense amount of labor a card index might be made, but it would be full of blanks to be filled in and progress and experience would make such frequent improvements in it that it would be hard to keep up to date. I know I have found it advisable rather to remember just where I wrote about this subject before, and refer to the old specification and bring it up to date.

But nearly every time there is something new. Ah, there's the hustle. It would be fun to thoroughly investigate each detail if time were unlimited. Get the trade catalogue, or ask the manufacturer, or use common sense if you have to, and then write the best you can. If it is a patented item it may be sufficient to say "Furnish and set John Smith's so-and-so." What is the use of giving a whole lot of detail if John Smith will do it anyhow? But if it is a competitive article, try to give the choices, leaving out the wasteful words. The experience you will get when the item is executed will undoubtedly enable you to improve it the next time you write it.

There is a short kind of specification which I often have to write, called "Block" or "Outline." It is particularly useful in getting approximate estimates or when in a hurry. It is also very handy to get an early agreement as to materials, to be later elaborated in a full specification. This does not proceed by trades but is a description of the building. I write it in this order: work included, con-

struction, exterior finish, interior (general, halls, toilets, each floor, etc.), mechanical (plumbing, heating, electric, elevators).

"Or equal" is the bugbear of specification writers. Practically it means that I have examined Smith's and Jones's articles and am satisfied with them, but you may know of another that is as good and I don't want to unfairly shut it out, but you'll have to prove it. What else can I do? If I had unlimited time, I might write up all the requirements and not mention any names. Or I might mention all the names I would accept if I could know them all. But if I repeated this item many times, the clause should be rewritten somehow to get rid of the "or equal."

Catalogues are vital items in your data. They should be carefully selected as they come in and filed in some classification—what one is not so important as that you know it well. To keep all will merely make your file a lumber room. I keep about 10 per cent. When manufacturers learn to omit unconvincing oratory and pretty pictures of buildings and give the architect the facts about their products, their literature will be more valuable to the specification writer.

AMERICAN ACADEMY IN ROME COMPETITIONS.

THE American Academy in Rome has announced its competitions for Fellowships in architecture, painting, sculpture, landscape architecture, musical composition and classical studies. The stipend of each Fellowship in the fine arts is \$1,000 a year for three years. In classical studies there is a Fellowship for one year with a stipend of \$1,000, and a Fellowship paying \$1,000 a year for two years. All Fellows have opportunity for travel, and Fellows in music, from whom an extra amount of travel is required in visiting various musical centers of Europe, receive an allowance not to exceed \$1,000 a year for traveling expenses. In case of all Fellowships residence and studio, or study, are provided free of charge at the Academy, with board at cost.

The awards of the Fellowships will be made after competitions, which in the case of the fine arts, are open to unmarried men who are citizens of the United States; in classical studies, to unmarried citizens, men or women. It should be particularly noted that in painting and sculpture there will be no formal competition involving the execution of work on prescribed subjects, as heretofore, but these Fellowships will be awarded on the basis of a thorough investigation of the artistic ability and personal qualifications of the candidates. To this end, candidates are requested to submit examples of their work and such other evidence as may assist the jury in making a selection.

Entries will be received until March 1st. Any one interested should write for circular of information and application blank to Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Avenue, New York, N. Y.

THE PRACTICE OF SPECIFICATION WRITING

A Symposium by Architects and Specification Writers

By George Herbert Gray, Architect,
New Haven, Conn.

THE object of these notes is to emphasize certain fundamentals in specification writing and to emphasize their relation to artistic results in the completed building.

Of fundamentals that should be kept clearly in mind there are three, corresponding to the three purposes for which specifications are written:

First: the specifications must serve as a guide for accurate and close estimates; second: in connection with the drawings, they must serve as a basis for a contract and must be so clear as to make dispute impossible, or at least remote; third: they must furnish adequate instructions for the construction and finish of the building.

The commonest fault with specifications is that they do not *specify*. They do not designate the things which are characteristic of the particular building in question; and the things which are designated are not designated with a sufficient degree of accuracy, particularly they do not show sufficient consideration of local materials and working conditions. The next commonest fault is the reverse of the above, that of failure to cover those things which are characteristic of all good buildings of the type in question. The correction of these two faults would naturally carry with it the correction of other faults of general looseness, both of subject matter and of presentation.

Whether the work is to be let under a general contract or under detail contracts, it is of convenience and value to write a separate and detachable specification for each trade and indicate under the head of "Work Included" the exact line of demarkation between the work of the various trades. In all the purposes which specifications serve it is essential that the information may be found *instantly* when wanted. To this end I find an index practically indispensable. In relatively short specifications it can be arranged by paragraph numbers and headings, in the sequence in which they occur. A logical sequence of paragraphs will make it possible to find at a glance any paragraph wanted. In writing the specifications the tentative or preliminary index will serve as a guide for the orderly and logical arrangement of the subject matter and the inclusion of all pertinent matter.

As to this order it is axiomatic that we should

begin with the general consideration and proceed to the details. One brief opening paragraph headed "General Conditions" may refer to a separate set of "General Conditions," "which form part of this specification." These may usually be uniform in all trades. The next paragraph may well be "A General Description of the Work," outlining briefly how the present trade is affected by any special feature in this or other trades—if there are any such special features. Next a paragraph on "Work Included." Looseness in this one paragraph is a frequent cause of much unnecessary variation in bids owing to the overlapping of specifications, or to complete omissions. Next a paragraph on "Workmanship," then one on "Materials," usually requiring a series of sub-paragraphs. Then follows a description of all the parts of the work not covered by the more general paragraphs and which cannot be fully set forth on the drawings. This calls for close co-operation between the drawings and the specifications. Many a well conceived design has been made impossible of achievement through failure to get into the specifications an adequate description of the essential materials and workmanship. If it is impossible to come to a final decision in any matter at the time of writing the specifications, then bids should be taken on alternate methods set forth in the specifications. Once the specifications have become part of the contract, the designer's limitations are pretty definitely prescribed and cannot be changed without undue expense to the owner. To the extent of being decisive in such matters, the designer must be precise and scientific.

In brief, the less of generalization and the more of specification, the lower will be the bids and the smoother and more rapidly will the work proceed to known results.

By Charles W. Steinbaugh, Architect,
Omaha, Neb.

I HAVE tried out about every method of writing or editing specifications. I have abandoned the card index and also the use of prior efforts for similar work as a dummy.

I am now writing or dictating every paragraph and page except about five pages of General Conditions and matter that does not require frequent review and revision.

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I have a fine checking list which has been developed with the idea of including every principal and sub-title for every kind of work and material. This is before me as I make a semi-final inspection of the drawings. While doing this I make a list of principal and sub-titles and carry out extensions of same and lay out the required corresponding notes on the drawings if not already there, then I write or dictate the specification. There are several reasons for adopting this laborious personal method. I avoid repetition and the inclusion of sentences that have no bearing on the work to be written up on that commission, as well as eliminating much chance for serious omissions.

Not the least of the reasons is suggested by the usual provision for interpretation of drawings and specifications. In reserving unto myself the full right of final decision in this matter I am fortified by having my own English to refer to.

After the work is brought to the form desired it is typewritten on light weight translucent paper, using a face sheet (to become the official office copy) and a sheet of the same paper is used with a sheet of paraffin carbon paper each side, making a negative from which blue or brown line prints may be made in any number at any time. The negative is filed with the same regard for its record value as is the set of tracings.

I am better satisfied with this method than any other I have tried. The additional time and expense involved result in greater accuracy, and a more intimate relation between drawings and specifications, less volume and ambiguity.

There is a great cry for standardization. At first thought it would seem to offer advantages, but on the whole very little is possible in specification work aside from general conditions of the contract and the contract form.

By Alexander C. Guth, of Buemming & Guth,
Architects, Milwaukee, Wis.

SOMEONE once said that a specification is a specific description of certain factors or elements that cannot be placed on the drawings. It is the very voice of the architect reflecting with unerring precision his thoughts and wishes concerning the what, how and where of all the component parts of the building he has designed. The specifications are the field control instructions and the resource of builder, artisan and material man, yea, all who have any relation whatsoever with the building project. They must be relied upon to explain, inspire, direct and instruct. The aim of their author should be that no unconstructive thought may ever creep into its pages. Every sentence and every paragraph must be clear, accurate and as concise as possible. Above all, they must be specific. "To be definite should be the outstanding quality of every specification."

Almost every issue of each professional monthly contains articles pertaining to the essen-

tials of specification writing. The specification writer is reminded on all sides to exercise his own good judgment with respect to specifying qualities, standards of excellence, materials, processes and equipment. But with all this caution and advice concerning the method of writing the descriptive narrative of the drawings, one of the most important factors is entirely omitted, and that is the "general get-up," as a newspaper man would say, of the specification. By that is meant the arrangement of the paragraphs or clauses in such a way that the different subjects follow consecutively and in logical order.

Let us take a typical building project in almost any first or second class city. The first thing when a job is let and operations are about to commence is for the contractor to take out the necessary permits as required by local ordinances. This would be followed by the excavating. Now then, in a mason specification, it seems reasonable to place the paragraph pertaining to permits first and then follow it up with excavating. Why make a contractor look through an entire specification to find these items? In one specification of a representative architectural firm the item of permits was found in the nineteenth paragraph, under the heading "Protection." What connection have permits with protection and why should excavating be mixed up with the removal of rubbish from premises when job is complete? That is where this last item was finally found in one specification. Such methods tend toward



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Alexander C. Guth

obscurity. It seems devoted to a complete discussion of each element, and it is not unreasonable to expect to find these elements in the following order: (1) Permits. (2) Excavating. (3) Shoring. (4) Concrete Footings. (5) Drain Tile. (6) Damp Proofing. (7) Common Brick. (8) Face Brick. (9) Mortar. (10) Chimneys. (11) Incinerator. (12) Fire Place. (13) Cement Floors. (14) Reinforced Concrete Slabs. (15) Driveway. (16) Walks, etc. Each one supplements the other. Each is clearly defined and tends to an easy interpretation. It is essential that everything be sacrificed to clearness. Anyone using specifications would certainly be able to follow the items very easily when they are arranged as above; and when the job is finally complete, one naturally thinks of cleaning up, removing of apparatus, rubbish, etc. Again it seems quite natural to look at the tail end of the specification for these paragraphs. Hardly enough emphasis can be placed upon the necessity of a consecutive arrangement. Work is becoming more intricate because of the advance in the methods of construction and the greater variety of materials that is available.

Now let us look into another phase of specification writing where there is ample room for improvement. A wise man once said "Brevity is the soul of wit." A little reflection on this remark will lead to more care in the preparation of a specification. In looking over the general

run of specifications there seems to be an endless repetition of words, phrases, etc. Once specific instructions are set forth, why repeat them in paragraph after paragraph?

A specification is not a treatise on a subject; therefore, it is necessary that only those features be emphasized which are essential to secure the desired results. Wherever possible, it is wise to concentrate in one paragraph, as for instance, "In General" or in a "Preamble" all the data that pertains in a general way to a number of paragraphs. By way of explanation, let us take a typical specification. Why specify under each heading, such as Painted Work, Enamel Work and Stained Work, that "the colors will be determined during the progress of the work," and that "each coat of material shall be thoroughly sanded"? It means a lot of needless words, one might almost say "red tape." It is necessary to specify only the essential requirements usually embodied in each paragraph. This method is definite, explicit and easily referred to. Past experience justifies the results obtained. The following is a typical specification embodying the above suggestions:

Painting

In General. The colors of all paints, stains and enamels will be determined during the progress of the work. Wherever enameling or staining is done on the inside finish woodwork, each coat of materials, as well as the woodwork, shall be thoroughly sanded before the next coat is applied. All nail holes on both inside and outside work shall be well puttied up. All woodwork, plaster, iron work and sheet metal work, including the tin decks and roofs, shall be thoroughly cleaned off before any painting or staining is done. All paint and varnish must be entirely removed from all glass, floors, walls, etc. and all work left in first-class condition.

Materials shall be the best of their respective kinds and shall be brought to the premises in the original packages, unbroken, with the labels of the manufacturer. Oil shall be pure kettle-boiled linseed oil, free from all impurities and adulterants. Lead shall be N— L— Co.'s best grade. Varnish shall be P— & L—'s, No. 38 "Preservative" or P— B— "P—" Interior Spar. Floor varnish shall be used for all inside work. Enamel and undercoating shall be P— & L—'s V— or P— B—'s W— R—.

Natural Finish. Finish woodwork shall have one coat of shellac and two coats of interior spar varnish. In the foregoing manner finish all the finish woodwork in rear entry, basement, hall, laundry, lavatory, attic hall, bed rooms five and six and bath room three.

Painted Work. All finish woodwork in balance of basement and all finish woodwork and metal work in garage shall have three good coats of white lead and oil.

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Enamel Work. All work to be enameled shall be covered with one coat of white lead and oil. One coat of enamel undercoating, one coat composed of one-half part undercoating and one-half part enamel and then two coats of enamel. In the foregoing manner enamel all the finish woodwork in dining room, living room, pantry and kitchen, alcove and adamant wainscot in kitchen. The last coat of enamel in dining room and living room shall be rubbed with pumice stone and oil, balance of enamel work shall be left bright.

Again under glazing, all headings are brief, and leave no vague impressions as to the wishes of the architect.

Glazing

All Glass as hereafter specified must be of first quality and shall be furnished and set by this contractor. All glass in windows shall be well bedded, sprigged, puttied and back puttied. Glass in all doors will be held in place by wood stops. These are part of the doors, but must be installed with small brads by this contractor. This contractor must call for all sash at building, and when glass is set and putty is dry, must return same to building. The architects reserve the right in detailing to slightly increase or decrease the sizes shown or figured in order to conform to brick measurements or other requirements without adding to or deducting from the contract price for such change in sizes.

Crystal Plate Glass shall be installed in all French doors and in all windows designated P. G. on elevations.

Figured Glass, either Moss or Syenite, $\frac{3}{16}$ inch thick, shall be set in all kitchen and pantry cabinets, inside sash doors, ceiling lights in attic and in window in first floor lavatory.

Single A, American glass, selected, shall be set in all outside windows where P. G. is not designated and where figured glass is not specified.

The above paragraphs were re-written from a typical specification (of a representative architectural firm) that covered pages of nice-sounding sentences that took lots of time to read over. Under each heading the fact was mentioned that the glass had to be puttied, back puttied, etc. All in all, this entire specification was just full of endless, useless stuff. It made a bulky book, it necessitated endless, wearisome paging to find anything, and it was a drain on the architect's finances because he had to pay for a book the size of a modern fiction novel instead of a modest booklet.

Then there is another thought concerning the make-up of a specification. It likewise saves a lot of needless words. The following are typical paragraphs showing what is meant:

Bumpers shall be 2 inches diameter (inside), wrought iron pipe. The lower end shall extend down into the concrete foundation. The upper end shall be cut on the angle, drilled and provided with a $\frac{3}{8}$ inch diameter bolt, so that bumper can be attached to wood door frame.

Ice Box Drain shall be of the "A—" type, 8 inches in diameter. Same shall have a galvanized iron pipe extended to a trapped outlet in sewer.

Switches throughout building shall be H— patent flush type with plates to match hardware. Switches in stair halls and in all other places designated shall be 3-way or 4-way as required.

Hot Water Boiler shall be 140 gallon extra heavy galvanized iron, set on iron pipe stand and with shut-offs, sediment cock and pipe, and connected complete with heater by this contractor.

I wish to note here that the headings are capitalized. They are also made a part of the first sentence. This presents a neat appearance. It is just as easy to pick out individual headings and likewise it does away with that endless repetition of words, the curse of the majority of specifications. By way of comparison, the following is one of the above paragraphs as one sees them in the general run of specifications:

Ice Box Drain

Ice box drain shall be of the "A—" type, 8 inches in diameter. Same shall have a galvanized iron pipe extended to a trapped outlet in sewer.

Some may scoff at all this as idle chatter; well, and good. A study of the plans as they are gotten up today reveals a distinct forward step in comparison with those of only a few years ago. More thought is spent on them. They are simpler, countless scale sections are found as



Robert Maurice Trimble

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Elmer Grey

marginal notes and much more detail seems to be placed on the individual drawing. But compare the specifications of today with those of yesterday and you will be surprised at the little real progress that has been made. The writer has before him a specification from the office of H. H. Richardson, which bears the date of 1880. The same arrangement, the same lengthy, endless repetition of words and the same paragraphing occurs in this old specification that one finds in those of today. There is real need for improvement. It takes time to change a specification but if it is gone at gradually, it can be accomplished without much effort. But when the changes have been made, one will be surprised to find that it will be less a task to write a specification, the stenographer will be able to get it out in less time and above all, the satisfaction on the part of the artisan will more than repay the efforts. "Respected by artisan and sought by client" should be the architect's creed. This is not a plea to make a literary effort of a specification. We read Sinclair Lewis' and Mary Roberts Rhinehardt's stories with great pleasure, not because of the plot or because the stories are generally well worth while, but because we admire their style. They make good reading. Why not make specifications good reading also?

By Elmer Grey, Architect, Los Angeles, Calif.

IN THE Far-West the masonry, carpentry, sheet metal and plastering are usually grouped together under what is known as the "General Con-

tract" and the outline following refers to such a "General Contract" specifications for residence work:

General conditions (covering points at law, etc., applicable to all contracts. These comprise two pages of printed matter); location of the property; location of the building on the property; permits; water (who is to furnish water during construction); "approved" materials (what is meant by the term); water closet; drawings (a full set to be kept at the building in good order, etc.); tool house; telephone; this contract (what it includes and what it omits); kinds of material (where used—this is a convenience to the contractor when figuring); compliance with ordinance; laying out of the building; form work; removing forms; delivering materials; protection of trees.

Masonry (included in the "General Contract"): Cement, sand, gravel, brick, tile, lime, "full cement mortar," rough concrete, "cement plaster," grades and excavation, trenches, back fills, pumping and bailing, footings, foundations.

The above is, of course, only the beginning. Every architect would doubtless wish to arrange his own headings in his own way.

**By Robert Maurice Trimble, Architect,
Pittsburgh, Pa.**

THE writing of specifications is one part of the work of the architect with which the average draftsman or student of architecture is not familiar, and in which he has had no training; therefore, when he begins the practice of architecture it is his hardest duty. On account of this lack of familiarity with such work, the specifications which are issued by the young architect are usually poorly written, indefinite and full of meaningless verbiage. When starting practice he generally uses specifications procured from another architect as a model to guide him in his early work and he learns from experience to improve on these until he produces a good specification of his own.

The specifications are a most important supplement to the drawings and their principal function is to define the character of the materials which enter into the construction of the building, and the manner in which they are to be installed; they should clearly and concisely set forth the methods of work and define the obligations and duties of the contractors.

All of the work which is to be done by each trade should be so clearly set forth as to prevent mistakes and duplication of cost. If this is not done the architect is penalizing his client, and it is easily possible for several sub-contractors to figure on the same item if there is the least doubt as to whom it belongs to. It is also important that this be done to avoid the vexed question of the jurisdictional disputes which are continually arising among the different trades and which are the most trying of labor troubles and the most difficult to settle.

The mere use of words should be avoided in writing specifications; they should be complete in

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every detail, but brief and to the point--there is no virtue in loading them with high sounding and meaningless phrases. There is no necessity for minutely describing the methods entering into details of construction which are matters of common practice and which every apprentice learns. In many localities up-to-date building laws clearly describe in detail the methods of making and installing many of the materials entering into the construction of a building and it is only necessary to specify that such and such a material shall be installed in accordance with the rules and regulations of the Bureau of Building Inspection of the district.

I am not familiar with the methods which other architects use in writing specifications, but presume that they differ greatly according to the disposition and taste of the individual. My own method is to take a specification of a building which is somewhat similar to the one under consideration and go over each section of it very carefully, writing in the changes caused by the difference in the operations and adding more or less voluminous notes as may be necessary; I usually do this several times before it is ready to be typewritten. As all parts of the specifications are closely related, important omissions can be avoided by contracting the habit of making notes of these items occurring later, the thought of which is brought forth by other items in the first parts of the specification. After it is typewritten I edit it carefully and make necessary corrections or additions.



George A. Chapman

In the past I delayed the writing of the specification until the plans were completed, but of late years I have found it easier to finish the working drawings and decide on questions which are more or less in doubt, if I start to write the specification before the plans are completed. I often find it difficult to settle upon certain materials or methods of construction and I can more easily come to a decision on such matters after having gotten into the specification.

I believe that most architects have their specifications for the ordinary operation typewritten with a reverse carbon, for blue printing; by this method it is easy to procure duplicates at any time and in any quantity. On the more important operations, particularly on public work, the specifications are printed and turned out in large quantities. It is necessary today to provide a number of copies of both plans and specifications, as it is the usual custom to furnish a set of plans and specifications for each general contractor who is estimating upon the work and often to provide copies for the different sub-contractors. Many copies are in demand during the construction of the building.

The standard General Conditions issued by the American Institute of Architects are helpful, and in common use; they contain clauses which were formerly in the Contract, and, with the standard form of Contract of the Institute, make a complete set of documents.

The order of the different items in my specifications is as follows: title, general conditions, excavating and grading, foundation work (including concrete footings and foundation walls), stone work, brick work (including terra cotta), interior tile partitions (a sub-division of the brick contract), structural steel work, ornamental iron work, fireproofing (including cinder concrete fill over the fireproofing), lathing, furring and plastering, cement floors, cement walks and drives, tile work, slate and marble work, sheet metal work, roofing, carpenter and mill work (including hardware) and painting and glazing.

It is a common practice today, and one which is compulsory for public work in some localities, to take separate estimates upon mechanical work, such as plumbing, heating and electric work, and in this case these items are not included in the general specifications, but separate specifications are written for them. It is also becoming usual to sub-let all of the different parts of the work, in which case it is necessary to separate the specifications for all of the different items noted above to make clear the work of each contractor. In such a specification it is important that the sub-contractors understand that their work includes certain items which are taken care of by the general contractor on the ordinary operation; these items include the removal of rubbish, the furnishing of scaffolding, temporary heat, etc.

The specification outlined above is for a building of fireproof construction; in one for an ordinary building of non-fireproof construction some of the

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items would be omitted, and some slightly altered; the general arrangement, however, would be practically unchanged.

A specification for alterations or additions to an existing building is more troublesome than one for a new building and requires a little more thought and care. In such a specification I add a section after the General Conditions which describes the operation, and sets forth the number and character of the alterations and additions, with an additional article on wrecking, repairing, etc. Of course, in such an operation there are many items which do not occur in one which is entirely new and it is important that care be taken to carry these entirely through the specification.

I have always written my own specifications and believe that this is customary, except in the offices having large organizations. If one can find the time, the increased knowledge of the operation which this practice brings is worth while. It is in many ways an unpleasant task and yet, like most tasks, it has its compensations.

By Louis R. Holske, in Charge of the Preparation of Specifications for McKim, Mead & White, Architects, New York City.

HOWEVER great a diversity of methods in preparing architects' specifications may be found in different offices, there are two fundamentals that are always present, whatever their expression in method may be.

One fundamental is the need of understanding fully the project requiring a specification before beginning. There is the use to which the building is to be put with all its relationships which must be understood. This will include the relation of the several parts, each to the other; anything peculiar in the nature of the occupancy of spaces, and other like points. A clear understanding of the above gives one a desirable familiarity with the project and enables one to determine intelligently suitable materials for use in each space.

The other and more important basic factor is the need of visualizing the construction of the project in detail. This will require a greater or less amount of time in proportion to the complexity or simplicity of the project. The amount of time required to analyze the construction of a small country house may be negligible, while for a large or complex project some days may be necessary. But this analysis down to minute details is necessary before the specification writer is in a position to proceed with his task. It is in analyzing the construction of the building step by step that the groundwork is developed for a clear specification. It enables the different classes of work required in any construction to be segregated and to be noted by the writer under their proper trade headings. Time was when a writer might ramble through a specifica-

tion, noting items as they occurred to him with a reckless disregard of trade segregations. Items of work often were inserted under trades furthest in character from the trade or trades normally installing them, and, under the easy-going methods then prevalent, such work was sublet without protest and duly installed. In these days of strict alignment of work by building trades employers associations and trade unions, this practice contains an element of danger. Such a misplaced item may well be ignored by the trade under whose heading it occurs on the plea of lack of jurisdiction, and, as the general contractor in estimating is unlikely to discover and place it in its proper trade, the chances for an extra become very great. This is one of the conditions that are eliminated by a careful analysis of construction of the project, step by step, with the accompanying notation of the items of work disclosed in such analysis under their proper trade headings. The importance of a careful analysis of construction regardless of the time consumed should be borne constantly in mind by the beginner, as it determines the difference between the clear or hazy specification. Speed in this work comes, of course, with practice, but it is poor consolation to think when confronted with an extra, that it might or should have been avoided by a little more care in analysis, which might have required slightly more time.

After segregation of all items of work under their proper trade headings, the writer is in a position to proceed with his draft or to dictate the finished matter. In former times specifications were written by hand and the work was pure drudgery. With the commercializing of the typewriter and the increase in the use of shorthand writing, a great deal of this drudgery has been eliminated. In the case of those who prepare a draft in handwriting, a great deal of this drudgery still remains. The habit of dictating finished copy is not only much more economical, but removes all the drudgery possible from the task. To the beginner who lacks confidence, this may seem a difficult thing to do, but he should persist in practicing until it becomes the natural thing for him.

Specification writing requires considerable mental concentration to which isolation is conducive. Interruptions disturb continuity of thought and encourage omissions. The best results are obtained by careful analysis and by listing all items of work under their proper trade headings, then, while this matter is fresh in mind, dictating the finished copy in a room where one may be free from interruptions.

By C. Krahmer, of the office of Guilbert & Betelle, Newark, N. J.

SPECIFICATION writing has been developed by the individual efforts of men who have been forced to make their own path. For this reason,

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Charles E. Krahmer

any means whereby a free interchanging of ideas can be made should be welcomed.

The business of contracting for the larger class of work has been reduced to such a degree of exactness that it is essential for the architect to compile his specifications in an accurate and systematic way and with a full understanding of the contractor's organization, so that each individual trade and its relation to the whole operation can be properly classified. This allows the estimator to quote accurately on the work. To obtain this result, the specifications should be sub-divided into each class of work that could be sub-let. Where the specifications are compiled without careful sub-division of the trades, the general contractor is never quite sure that the different estimates of sub-contractors do not overlap or meet.

Most offices employ a "Standard Specification." The standard specification should be in the form of a card index using preferably 5 x 8 inch cards with each trade carefully indexed for ready reference. The index is very important as the practicability of a standard specification depends, in a great measure, upon the completeness of the index. The standard specifications have the following advantages: (1) A complete check to prevent omission. (2) A ready reference. (3) A means of recording the best experiences. (4) A place where corrections can be made or repetition of errors avoided.

The danger in standard specifications is the temptation to make them unnecessarily bulky, and to become too general in application, thereby losing the

definite character essential to a good specification.

A "snake" consisting of a number of sheets of scrap paper clipped together and indexed at the edge for each trade is a great help, particularly for the inexperienced specification writer. The "snake" is, in fact, merely an indexed memorandum pad where notations for each trade are made while the inspection of the plans is being made and before the specifications are compiled.

Specification schedules are important in operations having individual treatment in a number of different rooms or spaces. These schedules list the finishes of the individual rooms, doors and windows, thereby eliminating unnecessary description within the body of the specifications and allowing the subject matter itself to be specified in detail without confusion. The schedules should be cross-indexed so that by referring to a certain room and following up a column in the schedule the exact page where the finish is specified can be ascertained.

The writer specializes in specifications for school work. These specifications are compiled individually for each job utilizing the specifications of a similar job as a skeleton upon which is built the requirements of each individual operation. The writer does not use standard specifications for the reason that they do not give the flexibility or individuality that is required in municipal work. They necessarily become general, thereby losing the definite character required in this type of work. For this reason I do not consider the A. I. A. "General Conditions" practical.

A practice is made of incorporating into the specifications the "Standard Grading Rules" of recognized organizations. Consultation is freely had with our designers and superintendents, as well as with the manufacturers and jobbers of the various products intended for use. From these sources, as well as from the organizations mentioned above, definite specification data can be obtained.

Public work requires competition which means that no patented materials should be specified outright and the familiar and despised "or equal" must be judiciously employed. A "pit fall" often encountered is the inclusion of cash allowances in specifications for municipal work. This should never be done, owing to the criticism invited by turning over a definite amount of the public's money for a purchase without advertised competition.

By William Stanley Parker, of the office of
R. Clipston Sturgis, Boston, Mass.

TO treat the subject of specifications briefly permits of touching only the broader fundamentals that are involved. Two essential elements are the skeleton outline and the detailed phraseology.

The outline of the specifications, it seems to me, could very well be substantially standardized, and if this were done it would simplify the labors of contractors when making estimates.

I took part in a joint study of this problem in 1913, as a member of a joint committee of the

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LeRoy Lewis, Jr.

Master Builders' Association and the Boston Society of Architects, and as a result of this work we arrived at what seemed to us the right arrangement of sections and the principal divisions and subheadings in these various sections. This report was printed and may be referred to.

Without going into the analysis of this arrangement at length here, I would merely say that it follows the general custom in and around Boston except that it recommends a more generous subdivision into sections of certain elements of the work, notably the miscellaneous metal work and metal doors and windows, on the principle which I believe should be observed in all specifications, so far as it is possible to do so that products which are distinct in their manufacture should be kept separate in the specifications, so that the various concerns estimating will generally be estimating on the complete work of a given section and subcontracts can be similarly made, simplifying the placing of responsibility on the work and the administration of the subcontracts. This policy will lead to an additional number of sections in the specifications but will tend towards a more complete writing of these sections and will greatly simplify the contractor's problem of getting estimates.

Each of the sections should be carefully arranged to cover in orderly sequence the various elements of material, workmanship and special locations. I have for many years adopted the policy of starting each section with a paragraph entitled "Work to be Done," giving in this paragraph a brief summary

of the work covered by the section. This, I believe, is particularly helpful when contractors are estimating. Generally speaking, I believe this clause should be followed by the specification of the materials to be used, followed by the clauses relating to workmanship and thereafter the varying clauses dealing with details of construction and special items according to location or finish.

A careful design of the various sections of the specifications will lead to an orderly presentation of the facts in a series of brief paragraphs, each touching a particular portion of the subject matter. The worst type of specification paragraph, to my mind, is the long descriptive paragraph that involves material, workmanship, finish and everything else bearing on the subject.

Another generality that I believe should control specification writing is to refrain from enumerating in the specifications schedules of work to be done, and the specifications should supplement the plans by giving the quality of material, methods of construction and finish, matters which cannot be shown on the drawings. It is dangerous to say a thing twice in words, and it is just as dangerous to say a thing twice, once in words and once in a sign language. Either let the contractors take off their quantities from the plans or resort to a quantity system of estimating, in which the list of quantities becomes the principal basis of estimating.

In regard to the detailed phraseology of the specifications, one cannot be too careful to use straightforward phraseology and technical expressions. I am not personally in favor of the abbreviated form of phraseology sometimes used. I believe complete sentences are more easily read and also more easily written, but the fewest possible words required to state the essential facts should be used.

In these days of quickly changing standards and materials, the price of a good specification is eternal vigilance. It is no longer safe to copy blindly familiar clauses from previous specifications. In the work of our joint committee, referred to above, we came across a specification where granite capings for piles were still specified in a standard clause although for years the architect had been using concrete. This is perhaps an extreme instance, but in these days so many new methods and materials are being presented for consideration that it is necessary to be constantly on the alert for changes, even in those clauses which we have come to look upon as standard.

The work of the American Engineering Standards Committee and the Structural Service Committee of the American Institute of Architects and other similar co-operating bodies, is developing the standardization of materials and their use more than ever before, and also developing methods for distributing information about these standards, so that architects may readily keep up to date. It is impossible for each architect to carry on all the investigations that would be necessary to acquaint him with the various new methods and materials at his

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disposal. In order to write specifications intelligently and wisely, however, we must have this information and this must be secured by co-operative effort through impartial technical bodies, like those mentioned above. With this material in hand not only the selection of the desirable material but its accurate specification becomes greatly simplified.

By P. B. Tallman, of the office of Warren & Wetmore, New York City.

THE ideal specification is one that will meet the following three main requirements: *Simplicity*, *Clearness* and *Flexibility*. As economy of effort on the part of the writer of specifications is essential, it naturally follows that, when the above three requirements are obtained, then the economy of effort must of necessity follow.

In presenting the following outline of the specification, the writer does not presume to offer it as meeting the conditions aforementioned, but does believe that the scheme as a whole is one that is working to that end.

Synopsis Specification of a Fireproof Building—General conditions, demolition (if any), excavation, waterproofing, masonry and concrete, structural steel, cut stone, floor arches, floor fill and finish cement, partitions and furring, roofing and sheet metal, rough carpentry, mill work and finished carpentry, hollow metal doors and trim, kalamein work, steel windows, ornamental iron, ornamental and plain plastering, interior marble, tile and terrazzo, painting and decorating, glass and glazing, hardware (if not in allowance), electrical fixtures (if not in allowance), kitchen equipment (if not in allowance), mechanical general conditions, heating and ventilation, plumbing, electric, elevators and dumbwaiters, elevator signals and hatchway equipment, pneumatic tubes (if not in allowance), laundry equipment (if not in allowance), vacuum cleaning, power plant equipment.

These sections can be either increased or diminished according to the quantity of work to be performed. For instance: if there were a large quantity of granite, exterior marble and limestone in a building, cut stone would be dropped and a section adapted to each of them substituted.

The same applies to other portions.

One essential fact should be remembered—that each section of a specification should only contain that which would be included in one sub-contract.

In writing the individual sections of the specification, the following procedure is suggested: *General Conditions*—The "General Conditions" apply to and govern the work of all trades; each and every sub-contractor shall observe all requirements and assume all obligations set forth therein insofar as applicable to his work and shall pay his proportionate share of the expense for water, telephone, heat, light, clean-up and disposal of rubbish, etc., as agreed upon between the general contractor and sub-contractor.

1. *General Conditions*—Should the general contractor and sub-contractor fail to agree upon the amount, the matter shall be referred to the architects, whose decision shall be final and binding upon both.

2. *General Scope of Work*—The work included in this division of the specification consists of the furnishing and installing of all the of every description (excepting only such as may be specifically mentioned as omitted), required for the completion of the entire work, in accordance with the drawings and these specifications.

3. *Schedule of Labor and Materials*—The following is a brief descriptive list of the work to be done, which list, however, shall not be considered complete as it is intended that this contract shall include all labor and materials properly pertaining to this division, which are essential to the completion of the entire work.

The general requirements specified under "Workmanship and Materials," Section V, shall be strictly followed, unless otherwise particularly specified hereunder.

4. *List of Drawings*—The drawings upon which this contract is based are listed in the accompanying "General Conditions" and form a part of this specification.

5. *Workmanship and Materials*—In Section 3 is given a schedule of "Labor and Materials" and in Section 4 reference is made to the drawings applicable to the work covered. Unless otherwise specified in Section 3, all workmanship and materials shall be as hereunder described.

By LeRoy Lewis, Jr., of the office of Schmidt, Garden & Martin, Chicago, Ill.

IN MANY architects' offices the man writing the specifications does not see the plans until they are practically ready for the specifications, therefore, the first thing to do is to get a complete set of blueprints of the plans as they exist at that time, upon which the specification writer can make all necessary notations in colored pencil.

The specification writer should then get all the office memoranda, reports of all conferences with the owners, also memoranda of special things to be taken care of that are not shown on the plans and read them over carefully, making special note of all items that refer particularly to the specifications. After he has studied the plans thoroughly, he should visit the site and note all existing conditions that would affect the specifications. In this connection I would mention soil conditions, existing buildings, old foundations, sidewalks, drives, trees, shrubs, etc. A further examination of the conditions should be made as to the method of handling the work, particularly in reference to maintaining outside hoists for use of sub-trades, whether portions of the building are to be built before other portions and particular reference where connections are being made to existing buildings. After all this preliminary data has been collected and the plans have been thoroughly

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studied, the work of writing specifications can then be started.

The specification writer should check plans completely. If he cannot interpret them, he cannot expect the contractor to understand them.

The question as to whether the job is to be figured by sub-trades or whether it is to be figured by general contract is immaterial. The specifications should be written in such manner that either procedure can be followed.

Particular care should be taken in the sub-division of materials so as to follow the decisions of the National Board of Awards with respect to the trade jurisdiction. The specification writer should be familiar with these decisions.

In starting to write specifications, it is the writer's practice, after becoming familiar with the plans, as above, to take a specification that has already been written where the building and various conditions are similar to the one under consideration, and to use this more as a specification reminder than as a copy. It is a mistake to try to make the specification for the new work conform to the specification being used as a reminder. It oftentimes occurs that three or four different specifications will be used in order to get one where the particular trade is similar to the specification to be written.

The writer uses the American Institute "General Conditions" with slight revisions to suit our local conditions.

The writer's practice is to take each sheet of the plans and check it for three or four trades only at a time, making notes of various items that must be covered, unless the particular item is covered in the specification used as a reminder. At the same time, if there are any things which are unusual with reference to any other trade, it is well to note them also under a heading for that particular trade in the list of notes. For instance, notes taken off first would be for the mason and concrete work, cut stone work, hollow tile, terra cotta, and waterproofing, and as the specifications for these trades are written the respective notes are crossed off when taken care of.

The next series of notes might be for sheet metal work, composition roofing, hollow metal doors, etc. It is possible to take additional trades and examine the plans for these trades only. This procedure is followed throughout the entire job and by the time the specifications are completed, the writer has been over the plans five or six times and each time something might be noted in the specification already written that has not been included and the same can be inserted before the specifications are printed. It is better not to typewrite the specifications until they are entirely completed. This is not always feasible but where specifications are to be stenciled, it is possible to make additions before they are printed. Under any circumstances, it is better to rewrite pages instead of having too many insertions in the form of addendas, etc.

After the specifications have been typewritten, they should be very carefully read over and the



R. H. Haslund

necessary corrections made. It is the writer's practice also to have the draftsman who has had charge of the particular job in question read over the specifications, if not before they go out to contractors, certainly before bids have been received.

The writer has never written a perfect specification and never expects to. It would take too long. Therefore, all the checking possible should be given, not only to the plans, but also to the specifications before contracts are let. It is costly to make the changes after the contracts are let.

The following is a general outline of arrangement of specification used by the writer but it is not intended that this form is to be strictly adhered to. Variations in the order can easily be made without in any way injuring the specifications. Several of the headings can be combined under one heading, if it is so desired. For instance, sheet metal windows and hollow metal doors, where there are only a few, could be placed as a sub-heading under the sheet metal work. Hollow tile fireproofing, gypsum fireproofing, waterproofing, etc., could be included under mason work, as these particular trades are handled by masons. Scagliola work could be placed under plastering. Where there is a small amount of iron work, both structural, ornamental and miscellaneous, even fire escapes and fire doors, these could be placed under the general heading "Miscellaneous Iron." Where there is a large amount of the respective items, the writer considers it better to

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make them the subject of a separate heading in the specification. Additional subdivisions can be made when conditions require it.

Subdivision of Specifications: General conditions, wrecking, pile foundations (wood or concrete) caisson work, mason and concrete materials, mason work, concrete work, hollow tile fireproofing, gypsum fireproofing work, waterproofing, cut stone work, terra cotta, hollow tile partitions and furrings, cork work, wood block pavements, sheet metal, tile and slate roofing, sheet metal window framing and sash, composition roofing, hollow metal doors, frames and trim, steel door frames, metal case work, suspended ceilings, lathing, furring, etc.; plastering scagliola work, terrazzo work, art marble work, tile work (vitreous) cork and composition tile work, mastic floors, magnesite floors and base, marble and slate work, rough carpenter work, interior finish, cabinet work (including finish), hardware painting and wood finishing, decorating, glass and glazing, steel sash (commercial), steel casements, screens, weather strips, structural steel, ornamental iron, bronze work, miscellaneous iron, fire doors and rolling steel shutters, fire escapes, library stacks, lighting rods, refrigerators, lighting fixtures, window shades, awnings, bathroom fittings, plumbing, sewage disposal system, filters, deep well work, heating, boilers and stokers, ventilation, electrical work, clock system, fire alarm system, elevators, dumbwaiters, refrigeration, sterilizers, kitchen equipment and laundry equipment.



DAVE RUBINS
1922

L. O. Kirk

By R. H. Haslund, of the office of A. H. Stem,
St. Paul, Minn.

A COMPLETE specification shall state the conditions of the contract documents; give general information; supplement the drawings and be descriptive of materials and methods of using materials. To accomplish this the specification should be logical in arrangement of articles and subject matter should be concise and accurate.

In determining the articles of specification, or in classification, I am governed to a certain extent by local conditions. The various trades and crafts and sub-contractors really dictate what the articles should be and what they should contain. I endeavor to maintain an order to the articles which will correspond as nearly as practical with the growth of the building.

When the outline form of the specification is complete there remains the actual writing of the articles. And when I do this there is one duty which I consider sacred above all others, and that is to include in each article everything that belongs to that article and to exclude everything that does not belong there. In other words, when a sub-contractor goes to my specification I want him to get all the information necessary for his part of the work in one section and not be compelled to search through the entire specification, picking up odds and ends that pertain to his work. Then the subject matter of the article resolves itself into presenting facts.

I believe in making the articles as concise and accurate as possible with as few generalities as possible. The specification may be general but should never be vague. In the past, it has been these vagaries and shifting of responsibilities that has kept the architect from coming into his true position. And this has been extremely annoying to the men trying to figure the work.

In the above paragraphs I have stated what I try to accomplish in my specification. I shall now give you briefly my method of writing my specification.

To start with, of course, I have the drawings before me and all notes that are to be incorporated in the specification and also my checking list. I then select a specification or several specifications of buildings similar to the one in question. My general conditions are very similar to those adopted by the American Institute of Architects with changes to meet local conditions. The articles of the specification I choose from my outline form or checking list. I use what material I can from the specifications previously written which have proven satisfactory and compose the remainder to make a complete article of the specification. The entire specification is written in this way and when completed applies only to the building for which it is written.

This method of specification writing may be a little longer than some in which subjects are written on cards and kept on file. But I believe

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it is more accurate. To me it seems incredible that a list of subjects can be kept on file sufficient to cover all the peculiar conditions encountered in various types of buildings.

Standard Construction Classifications: (1) Matters preliminary to contract; (2) articles of agreement; (3) general conditions; (4) general work and preparation of site; (5) excavation; (6) foundation; (7) concrete and concrete work; (8) water-proofing and damp-proofing; (9) cement hardeners and densifiers; (10) brick work; (11) hollow blocks: structural, furring and fire-proofing; (12) architectural terra cotta; (13) stone work; (14) paving; (15) structural steel and iron; (16) erection of steel and iron; (17) miscellaneous steel and iron; (18) ornamental metal work; (19) roofing; (20) sheet metal and sky-lights; (21) fire resisting doors and windows; (22) special doors and windows; (23) vaults and safes; (24) carpentry; (25) mill-work; (26) weather strips and caulking; (27) furring and lathing; (28) plastering; (29) marble and slate; (30) tile: floor and wall; (31) special floors; (32) painting and finishing; (33) glass and glazing; (34) hardware; (35) furnishings; (36) models; (37) plumbing; (38) heating and ventilating; (39) electrical; (40) elevators; (41) refrigeration; (42) power plant; (43) equipments, industrial and other; (44) construction plant; (45) landscape; (46) acoustics; (47) regulations.

By John O. Merrill, of the office of Lowe & Bollenbacher, Chicago, Ill.

IN DEVELOPING a systematic method of writing specifications, it is necessary first of all to consider the results to be obtained by such a system. The primary object is to produce good specifications and to produce them with a minimum expenditure of time. In good specifications one does not find the following common errors: (1) omission of necessary causes; (2) discrepancies or inconsistencies between drawings and specifications; (3) specifying of materials or methods which are not suitable or which are defective; (4) unfair or ambiguous clauses; (5) lack of clarity or definiteness as to division of work between different contracts.

The method of specification writing used in this office involves the use of a specification card file. The file contains some 1500 cards covering all subjects likely to be encountered in the construction of a modern building of any class with the exception of very special features. The cards are in such form that alterations by pencil can easily be made to suit the requirements of the particular job. A large proportion of the clauses, however, especially those dealing with quality of materials, can be used without correction. The file is liberally divided and sub-divided with index cards forming a general outline for all specifications. The first step in writing a specification is the preparation of a skeleton outline

for the special problem. This outline comprises a list of all clauses to be included in the specification. In the preparation of this outline, the card file is used as a "tickler," with constant reference to the drawings and to the notes made during conferences with the owner. After the outline has been completed for all trades, cards are selected from the file, altered when necessary to comply with special conditions, and, if required, special clauses are written on blank cards. The cards are arranged in the proper order and, with the outline, which serves as a program, are turned over to the stenographer.

No system of specification writing can be made "fool-proof." The specification writer must use his own judgment as to whether a particular clause is appropriate to the special problem at hand. He must try to produce a balanced specification in which the space given to each element is proportional to its importance in the building. For example, the specification of structural steel for an office building is entirely inappropriate for use in a specification for a small building involving only a few beams and lintels. In the first case, detailed provisions for the fabrication, inspection, delivery and erection of the steel work must be made. In the latter case, the whole subject may be covered in a few sentences.

We have found this system of specification writing very effective in eliminating the errors mentioned at the beginning of this discussion. The careful preparation of an outline tends to prevent the omission of necessary clauses. It is a rule of our office that the specification writer shall be the final checker of the drawings, this resulting in better co-ordination between drawings and specifications. In this connection we have found it useful for the specification writer to prepare a list of those items which are referred to in the specifications as being shown on the plans and to turn this list over to the chief draftsman. In supervision work, when specified materials or methods prove unsatisfactory, a record is made on the proper card and the error is never repeated. In a like manner, ambiguous clauses are soon discovered when misinterpreted by the contractor, and the corresponding card is corrected at once. We have used this method in the preparation of specifications for many types of buildings, both large and small, and it has proved satisfactory in every respect.

The following is the general outline for all specifications, corresponding to the sub-divisions of the card file. Each sub-division contains from one to thirty cards. *Instructions to Bidders. General Specifications:* general description, work included, work not included, permits, local rules, special orders, plant, etc.; temporary work; preliminary work; miscellaneous. *Masonry:* general; excavation; materials; construction—concrete, reinforced concrete, brick work, rubble stone work, cut stone work, terra cotta, fireproofing, partitions; miscellaneous, winter work. *Waterproofing and Dampproofing:* waterproofing—integral method, membrane method; dampproofing. *Structural Steel and Iron:* general;

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materials and workmanship; construction; miscellaneous. *Carpentry*: general; materials and workmanship; structural and rough carpentry; carpentry iron work; finished carpentry—exterior woodwork, fire resisting work, interior woodwork, flooring, doors, windows, stairs, cases, fixtures, etc., hardware, miscellaneous. *Sheet Metal*: general; materials and workmanship; construction—gutters, flashing, conductors, skylights and ventilators, sheet metal decks, sheet metal windows, doors and trim, miscellaneous. *Roofing*: general; materials and workmanship; construction—wood shingles, slate, tile, asbestos, composition, tar and gravel, miscellaneous; guarantee. *Lathing and Plastering*: general; materials and workmanship; construction—furring, lathing, metal beads, exterior plastering, interior plastering, gypsum partitions, ornamental work; miscellaneous. *Tile, Marble and Mosaic*: general; materials and workmanship; construction; distribution. *Painting and Finishing*: general; materials; workmanship and preparation; exterior woodwork; metal work; interior woodwork; flooring, wall finish, miscellaneous. *Glazing*: general; materials and workmanship—sheet glass, plate glass, leaded glass, wire glass, prism and ornamental glass, obscure glass, mirrors; distribution. *Ornamental and Miscellaneous Iron*: general; materials; construction—stairs, fire escapes, fireplace iron work, registers and grilles, tablets, sidewalk lights and doors, elevator enclosures; miscellaneous. *Electric Wiring*: general; system; distribution—power wiring,

lighting wiring; materials, apparatus and construction—generators, switchboards, cabinets and panel boards, conduit, wiring, outlets, receptacles and switches, fixtures; low tension wiring—call bells, burglar alarm systems, fire alarm systems, signalling systems, telephone equipment; miscellaneous. *Plumbing*: general; materials and workmanship; apparatus; drainage and sewerage; water supply; fixtures; gas fitting; miscellaneous; guarantee. *Heating*: general; system; boilers and accessories; pipe and fittings; radiation; valves; registers; pipe and boiler coverings; temperature regulation; warm air systems; miscellaneous, guarantee. *Ventilation*: general; materials; system; ducts; registers and grilles; fans; motors; filters and air washers; miscellaneous; guarantee. *Finishing Hardware*; *Mechanical Cleaning Systems*; *Elevators*; *Interior Decorating*; *Landscaping*.

By L. O. Kirk, of the office of Hewitt & Brown, Minneapolis, Minn.

FIRST of all, I wish to emphasize, particularly to the younger draftsmen, that an architectural commission is not primarily an opportunity for the making of a fine set of drawings.

The purpose of the drawings and the specifications is to illustrate and describe the contemplated work so completely as to convey to the builder and his workmen a definite idea of just what the owner wants, the completed appearance of the work, its structural arrangement and the material composing it. To that end careful consideration must be given to a choice of the materials, a convenient arrangement of the parts, and a nice discrimination in proportions, color and finish, suitable for the purpose intended. Before a line can be drawn, or a word written, much labor must be expended in marshalling the facts, fancies and conditions affecting the work.

The accomplishment of the average building commission involves preparation of drawings, specifications, the general conditions of the contract and finally, where the minds of men have met and details are fixed, the agreement, which is essentially a statement naming the parties to the agreement, the work to be done, the time of completion, the contract price, terms of payment, and sometimes other private matters such as penalties, bond, etc. To the general conditions are assigned controversial matters bearing on the relations and accord between the instruments of service, the general clauses governing the relations of the owner, contractor and architect and the conditions and circumstances affecting execution of the work. The drawings illustrate the architect's conception of the work, while the specifications describe the materials and ways of working.

The particular purpose of the drawings is primarily to illustrate the form of the structure and the arrangement of its parts. The specification must complement this purpose and convey information which may not be practicable or desirable to show

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on the drawing, or, to reiterate or emphasize the purpose of the drawing.

The special purpose of the specification is to describe the kind and quality of the materials to be used and the conditions under which the work shall be done. A minor purpose of the specification is to collect, digest and organize to the particular end desired the information and trade knowledge applicable to the job. These are sometimes necessarily too voluminous to put on the drawings in the form of notes, but usually some notes can be put on the drawings, which are strengthened to that extent and the specification shortened accordingly.

The instruments of service (the plans, specifications, etc.) should form an imperative, definite, exact statement, not liable to misinterpretation, of the contemplated work. Make them as brief as a complete statement will permit; concentrate emphasis on the essentials and do not allow one part to overlap the other. In other words, eliminate the superfluous and do not repeat information. The instruments of service must be readily digestible to the workman. Remember: "In every work regard the workman's end, since none can compass more than he intends."

Worthy of consideration also is the standpoint of these, whether they be workmen on the job, or purveyors of material to these same documents; they are not mind readers.

A short formula to be remembered in compiling drawings and specifications covers these paramount considerations: (a) Do what, when, where; a statement of the work required. (b) What with; a description of materials. (c) How; the minutæ of workmanship.

Building construction, like other human endeavors, constantly changes with progress in adapting means and methods to requirements and it is necessary for the office worker to be on the alert for helpful ideas. He should be conversant with a wide range of literature and be keenly observant of what others are doing. From the ideas available he should be able to make a sure choice with a well defined reason. Drawings and specifications are necessarily made in haste, and, working under pressure, the draftsman instinctively recognizes doubt as a deterrent and relies upon himself. Such ability and training is, to the inquiring mind, a desirable acquisition.

By William Deming of Donn & Deming,
Washington, D. C.

THE writing of specifications is probably the weakest link in the chain of duties of a small architect's office, where the word "small" is used not as limiting the capacity, talent, or reputation of the architect, but refers to a practice in which the volume, or character of the buildings to be specified, make it financially impossible to keep experienced structural, mechanical and electrical engineers on the pay roll.

For an architect to personally write an ideal specification for a first class building of the complex sort (such as a hotel) would require that he be experienced in law, well versed in theory and practice of the various branches of engineering and familiar with the technical and practical terms of the building trades and with the various tricks of the trade.

In an office where a large amount of important work is being executed, the architect calls on the assistance of the various lines of engineering for both the designing and the specification work, so that he has only to do with the compiling and co-ordinating of the various parts.

One of the frequent misunderstandings between the architect and the builder occurs in the very beginning in the "excavating." In connection with that work it is unfair to the contractor, and possibly to the client, to make the excavator responsible for any rock, old pipes or foundations, the presence of which was unknown to any of the contracting parties and was not apparent from the surface. Great care should be taken in preparing a clause to cover the responsibility and to define just what material is to be considered rock, and in what manner it will be taken care of, if discovered. It also seems to be the accepted practice, unless it is particularly mentioned that trees and stumps are to be removed, for the contractor to call for an extra in spite of any elaborate description of how the excavating, back-filling, grading, surfacing and seeding should be done; but it is the irony of fate that when any of the trees happen to be the pride of the owner and are expected to be saved, the excavator will cut them down before any one is aware of it and once down no amount of damage can compensate for a fine full-grown specimen.

It is not the province of this article to outline the items to be included in a specification, as there are many good published outlines that are a great help to the writer, and it is an excellent rule to review the specification with such a guide. It is an easy matter for the writer to have a complete mental picture, but fail to express himself in such terms that his expression can be construed by others only in accordance with his intentions.

Local trade names for materials, finishes, and grades must be known. For instance, "No. 1" or "A Grade" may be used in a specification in an endeavor to obtain the best where, in the terms of the trade, a much lower grade might come under that heading. The practice of substitution, in some cases, has become so universal that the contractors will so interpret the specification and will not bid on the more expensive article. Verde antique marble, unless described as genuine imported, will bring a native green marble; bronze hardware will be interpreted as bronze plated; long leaf pine will not be from the *Pinus Palustris* species once in fifty times; mahogany finish is the accepted term for birch or other similar wood, stained to represent mahogany; Bower-Barff finish will often come as a black finish on steel instead of the genuine Bower-Barff finished

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iron; and so on through the various trades. Misunderstandings will result not so much from a desire to take advantage of the architect as from a misinterpretation of the real meaning of the specification and the fear that a competing bidder is working on such an assumption.

For an architect who is building in different sections of the country the lumber problem is perhaps the most complex, as the different lumbermen's associations have different standards, which are not usually comparable, and the uses of finished woodwork for trim, doors, sash, etc., varies in the different sections of the country, depending upon the local supply and prices. There is a movement on foot to have comparative tables prepared and to put the grading of the lumber on a similar basis that would do away with most of the present confusion. In fact, all the manufacturers seem to be getting together to prepare standard specifications for their materials, establishing the quality and method of doing the work and it is a great move in the right direction. By following these standards a better piece of work will be obtained and there will be a saving effected, as the contractors will be figuring on something that is familiar to them.

By D. A. Hamilton, of the office of Rutan, Russell & Ward, Pittsburgh, Pa.

BUILDINGS are a little like human beings, in that, of the thousands and thousands we see, no two are exactly alike. To be sure there are twins and triplets among buildings, as among humans, but in general each is a little different from the other.

It is because of this individuality among buildings that most of the so-called "systems" for writing specifications fail. Such systems as card indices probably have a certain amount of merit but they should be used with a great deal of care. Use them if you must, but don't trust them to be complete. For my part I prefer to treat each specification as a separate problem. There are a great many things which will shorten the work of writing specifications but there is no "automatic" way of writing them.

Briefly, my own method of writing a specification is this: having first made myself thoroughly familiar with the completed drawings. I make a sort of synopsis of my specification. For this I take several sheets of scratch paper and head each one with the name of one branch of the work, such as "Excavation," "Concrete Work," "Brickwork," etc. Now taking these sheets one at a time, I go over the drawings very carefully and jot down all the various places on the job where that kind of work occurs as well as any unusual conditions which exist. After doing this with each trade, I have a good outline of the specification. This may sound like a needless step but I find it much better than going all through the drawings each time I write a paragraph in the specification.

With my synopsis before me I am ready to start the actual writing of the specification. I use the

"General Conditions" published by the American Institute of Architects. This is a legitimate short cut and is a very excellent set of General Conditions. Then I write the specification for each of the various branches of the work as nearly as possible in the same chronological order in which they will be executed at the building. This matter of arranging the work in order is a great help not only in writing and checking the specification but also to the contractor in estimating on the work.

There are two other things which will lessen the amount of writing. One of these is the practice of specifying that materials shall be according to the standard specification of the American Society for the Testing of Materials, when specifying a material for which that society has adopted a standard. The other is the practice of cutting up an old specification and pasting those portions which apply to the new building into the specification which is being prepared.

After I have written the specification I check it very carefully. This I regard as the most important step of all. Check your specification in every way you know of, to be sure it is complete.

So often architects spend thousands of dollars to design and plan a building well and then by neglecting to properly check the specification fail to get just what they want in the building.

The contractor is in business to earn a living and we have no more right to expect him to furnish something which is not called for by the drawings



William Stanley Parker

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and specifications than we have to expect our grocer to give us a sack of sugar free merely because we are out of sugar.

I have very often seen articles on specification writing which said, "Be concise." Yes, be concise, but don't be concise to the point of omission. Remember that the specification is a part of the contract and as such is a legal document. Write it carefully and include everything which you want included in the building.

I remember reading a specification in which the writer said, "all concrete work shall be 1-3-5 mix." That means a definite thing to you and me, but what would it mean in a law court? One of what, and three of what, and five of what? Yes, the contractor would know what it meant too, but if he should choose to put in one part of mud to three of dirt and five of cinders, he might be within his legal rights and the owner would perhaps be compelled to pay him extra to get what was really wanted. If you mean "3 parts of clean sharp river sand free from loam and other deleterious matter," say so.

By F. S. Allyn, of the office of Lawrence & Holford, Portland, Ore.

OUR work is usually let in four contracts, viz.: general, plumbing, wiring and heating. The specifications for the General Contract are subdivided to assist the contractor in sub-letting parts of the work, as follows: concrete work, masonry, terra cotta, structural, steel, carpentry, mill work, glass and glazing, painting, tile work, etc. The title of each subdivision is followed by a roman numeral, thus: Concrete Work I, Masonry II, etc., and the paragraphs are numbered in the hundreds to correspond with heading: Concrete work starts with Par. 100, masonry with 200, etc., so that paragraphs can be added at any time to any sub-division without interfering with the numbering scheme.

Specifications are bound on the left-hand edge of the sheets and the paragraph titles and numbers are on the right. Sub-divisions are always started on a new page, with the heading at the top.

In the "General Conditions," one should cover all the loose ends, provide for the special clauses covering the relations of the general contractor with the architect and owner, provide for the bonds, insurance, rights reserved, additions and deductions, payments, method of handling the work, and the like; but the General Conditions should not contain blanket clauses that would work an injustice to the contractor if insisted upon, and which would make his price for doing the work, if figured under these conditions, unreasonably high. It is not necessary to have these hard and tight requirements, which the court very seldom recognizes, to avoid extras, but it requires more care and thought in preparing the specifications to cover all the items in a clear manner without attempting to spread the terms, "workmanlike manner," "to the architect's entire satisfaction," or "as may be needed" beyond their legitimate bounds.



D. A. Hamilton

The architect must be the interpreter of his own specifications and he should be careful not to read into the specification anything that would not be apparent in the text to the average intelligent builder.

There are two much-disputed methods in specification writing; one is calling for a particular article or make, while the other relates to the advisability of using old copies of specifications for interlining when the work is of a similar character. The tendency of our office is to pick the article which, in our opinion, is best suited for the particular place and purpose and specify it by name. It would seem that after interviewing salesmen, examining samples, comparing past experiences as to the satisfaction given by this same article that it is logical to use something that has been tried out or thoroughly looked into, rather than to accept a so-called equal, which has not gone through this test. This does not create a monopoly of any one article, as the conditions vary so much that an article satisfactory on one piece of work may not be entirely suitable for other conditions.

The practice of interlining from previously prepared specifications is frowned upon by some writers, but where proper thought is given to the new specification to make it thoroughly applicable to the building in question, it seems to us to be a useless expenditure of time and effort to attempt to compose a new specification without some guide. One not only has the benefit of comparing the old specification with his experience in having the work executed, but there are a number of items, such as concrete work, brick work, waterproofing, plastering, where the quality and method of doing the work remain very much the same.

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One of the great helps to the successful writing of specifications is to follow up the work in the supervision, and for this reason, I think, it is essential that the specification writer frequently visit the work under construction and he will soon learn from the various sub-contractors to eliminate some of the restrictions in the specifications and probably to insert others.

Specification writing is like a game of golf, it takes a life time to learn it, and the average of all the combined scores of golfers is a number of points from par.

**By C. M. McClure, of the office of
York & Sawyer, New York City**

THE demand for more and a better grade of specifications is becoming greater each year, due probably to their increased importance through the employment of many new materials, with improved methods of the use of these materials and also to the larger amount of construction. With this demand have come added requirements and the necessity of making a more perfect product is recognized.

The measure of the worth of each specification is its success or failure to describe and amplify that which has been illustrated on the drawings, so as to complete the story for the whole operation and to do so with such clarity that the desired results shall be secured without additional explanations, thus avoiding changes, delays, extras and added expenses. In short the meaning of the description should be as clear to the reader as to the writer.

To this end the specification writer must possess not only theoretical knowledge, which alone is not sufficient to comprehend the complete process, but practical knowledge, gained through experience, chiefly from observing and learning how the subject under consideration has been and is being accomplished by others, because the theory heretofore questionable, thus becomes a fact through demonstration.

Ability to describe the matter properly is of course all important, the use of trade names desirable, the coining of new words and the use of uncommon expressions to be avoided. Brevity should at all times be exercised, for many words not only complicate the meaning but tend to weaken and even destroy it. Lack of conciseness gives rise to doubt, leads to guessing, creates confusion, demands interpretation, opens the gates for speculation and invites trouble.

Before going on to take up the specification step by step, it is important to add that the specification writer should have a system and should follow it. There may be as many systems as there are writers of specifications. The one to use is the one the writer understands. Frequently it is desirable to describe the results to be obtained rather than the method of attainment and the specification writer should throughout the writing, never lose the opportunity to improve either the construction of the work or the manner of describing it.

The first step in the actual preparation of a specification should be a thorough study of all the drawings and other data relating to the project and the securing of a perfect understanding of the whole scheme. This should be done before any writing is started or any notes are taken. The necessity for understanding the task in hand before attempting its solution is self evident, for no approach to the solution can be made until the governing factors are understood.

A good practice is to first prepare a memorandum specification of the whole work, preferably as soon as the sketch plans have been completed. This memorandum should be used as a record for the changes and as a guide in writing the final document. The memorandum specification is not only helpful for the writing of the final work but may serve materially in the preparation of the working drawings and should be placed in the hands of the man in charge of them. By this method the drawings and specifications, being more closely associated, become better instruments of service.

The general conditions should be written to fit the job and contain all the general requirements for the whole of the work and should thereafter be neither referred to nor repeated in the text. They are just as forceful and effectual grouped together and located in their proper place at the beginning of the document as when sprinkled throughout the text.



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The second step should be in the preparation of an outline of the whole project, arranged in the order in which the different branches of the work will be required.

The next step should be the taking of notes of the different items, subject by subject, and arranged under their several heads of the outline above described.

And then, but not until the above described work has been completed, may the drafting or writing of the specification be started. This writing will be simplified in proportion to the degree in which the preliminary work has been studied and is understood.

It is important to rewrite, after proofing the first writing, and if possible, to write it a third time, if a finished product is desired.

It is desirable to have the draftsman in charge of the work or some other person familiar with the project, read over and correct each of the writings, because, being seen from another view-point than that of the writer imperfections are more likely to be discovered. This will give further opportunity for improvements before issuance.

As a review of the above the key to the whole problem lies in the scope of work and when this "scope" is fully understood its description will be materially simplified. The description of materials, workmanship, finish, assembly, etc., will follow along in their natural and proper orders. When these points have been accomplished and serve to make the subject understandable the purpose of the specifications will have been fulfilled.

By David B. Emerson, of the office of
Hentz, Reid & Adler, Atlanta, Ga.

THE methods used in the writing of specifications in the office of Hentz, Reid & Adler, Atlanta, Ga., may not be the best possible, but they serve the purpose very well in this particular office; therefore, they may be of interest to others.

During these past three years this office has built and projected work amounting to over three and a quarter million dollars, covering over seventy different jobs. This work covered a large variety of buildings, among which were three department stores, a large moving picture theatre, three hospitals, an office building, a number of small commercial buildings, a public school, one college building, a large number of residences, and alterations to a number of different buildings.

The method followed in the writing of these specifications is of very little interest, as no two men can work exactly alike where there is no known formula, the question is purely one of temperament and mental attitude. Final results are all that should be considered and the specifications coming out of this office have been uniformly successful, the number of extras due to omissions, etc., is very small, and very few serious disputes or misunderstandings have

occurred between the architects and the contractors.

The form of specification used is neither new nor original, the general scheme was shown to me some years ago by Mr. Louis R. Holske, specification writer for McKim, Mead & White. The basic idea is to specify as nearly as possible in the same order in which the building is to be built, to specify the work of each trade, separately, to specify the material and workmanship of any particular item and to follow with the work to be done under that item. Where special articles are specified, they are specified by name, with an alternative if possible, also specified by name, but the term "or equal" is avoided as far as possible. In specifying timber and lumber the grades are always specified according to the grading rules of the various lumber associations. Sheet metal, etc., is specified by weight, gauge or coating.

The General Conditions of the American Institute of Architects are used, but in addition, a few extra conditions which from experience have been found necessary are added. The general scheme of the specification is as follows: general conditions, mason work, re-inforced concrete, brick work, fireproofing, cut stone work, ornamental terra cotta work, plastering, interior marble and tile work, structural steel, ornamental iron work, carpenter work, fireproof windows and doors, hardware, sheet metal work and roofing, painting and glazing, plumbing and electric wiring.

By William Wessel of the office of

Bertram Grosvenor Goodhue, New York City

THE practice I believe best in writing specifications is to keep in touch with the man in charge of the making of the drawings, the man who, in some offices, is called the "job captain," from the time the drawings are started, consulting with him as the work progresses and making memoranda of items to be covered in the specifications under different trades. These consultations result not only in material for the specifications, but often in the modification of the drawings to correspond with certain items in the specification agreed upon by the job captain and specification writer.

When the drawings are practically completed, I believe that a general review of them should be made and all additional special points for the specifications noted under their proper trade headings. After this, it is well to get a clear mental picture of the whole job with the job captain in order to check up. The next step should be a review of the drawings with each particular trade in mind, to see that everything that properly belongs under each heading is included and is clearly specified. Following this, there should be a final checking.

By this method the work of preparing specifications is carried on simultaneously with that of making the drawings and the specification writer is not forced to digest mentally a quantity of unfamiliar material in a short time, as is the case where he does not begin the preparation of his specifications

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until the drawings are practically completed. This method results in a closer agreement between the drawings and the specifications because of the changes which it is possible to make in the drawings as the work progresses. It also results in specifications which interpret more perfectly the intention of the designer.

In addition to consulting with the job captain throughout, I believe in consulting with the representatives of the manufacturers and in making constant use of manufacturer's literature during the whole progress of the work.

The notes I make while the drawings are being made are written in pencil on sheets of yellow paper, those relating to each trade are kept together, the name of the trade being written on the top sheet. I make these notes as full as possible and often they constitute complete paragraphs, so that I have my material in good shape when the time comes to begin putting the specifications into regular form. These notes are then transcribed by the typist and brought back to me for final revision and for the addition of any paragraphs necessary to cover additions or changes that have been made in the meantime. I arrange my specification under the generally accepted headings.

So far as the use of paragraphs or clauses from old specifications is concerned, I believe that it is obvious that such material should not be incorporated in new specifications, unless after careful examination it proves to be entirely applicable to the job in question or is so modified as to make it entirely applicable. The specification should be written to represent the job in hand, without any superfluous matter. I do use old specifications for the suggestions they contain and as a means of checking. I also use a card file of specification paragraphs, using it in the same way: i.e., to suggest the wording of new paragraphs and as a means of checking. In order to properly cover a job, a specification should be thoroughly written for that particular job.

I believe that a specification writer should be a student always, from the time he takes up the work until he is no longer able to wield a pencil. What I mean is that he should always be ready and anxious to learn about new materials, appliances, equipment, and new methods of construction. I believe that, furthermore, a specification writer should be constantly on the alert for information on all these matters without regard to whether this information can be used on the particular job in hand. Workmen, contractors, manufacturers' representatives, and catalogues are all valuable helps, but naturally if a firm has something new to offer they are most likely to call attention to it in their advertising. For that reason, I believe in carefully going over the advertising pages of the architectural magazines to keep my information up to the minute. The specification writer should, I believe, constantly pile up knowledge, preserve notes, and write specification paragraphs to be filed for future reference, so that he may have a wide enough range of up-to-date information on hand to form a substantial basis for the discussion of each new job and for the



William Wessel

preparation of his notes for the specifications of that job when the occasion arises. By taking this view of specification writing, the work is made much more interesting and is not merely a grind from day to day to get out the work in hand.

By George A. Chapman, of Tyrie & Chapman,
Minneapolis, Minn.

OBSERVATION has lead me to believe that general specification writing is a much neglected art, realizing as I do that the specifications are the most important of the contractual documents. Again I am made to realize, as executive of the office, the importance of properly prepared specifications, since the lack of them inevitably reflects back to the executive to straighten out. Below I give an outline of my method of specification writing and of my interpretation of what a specification should be.

A—General Aim of Specification: (a) It shall contain as "The Most Important" of the contractual documents all legal conditions governing the contract. (b) It shall collect in convenient, concise, definite form all of the materials used in the particular building covered and shall describe the method by which each is incorporated in the building. (c) It shall be sufficiently complete and definite (coupled with adequate accompanying plans and details) to guarantee (barring changes made subsequent to award of contract) *no extras*—the greatest cause of dissention.

B—Correlation of Drawings and Specification: (a) There shall be a definite correlation established

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between drawings and details of the building and specification. Avoid duplication—to illustrate: On the drawings and details shall be schedules of materials, finishes, etc.—specification shall refer to schedules thus eliminating repetition of lists so far as possible. (b) On drawings and details nomenclature shall be general, not specific, in detail—thus: Use the word “Metal” rather than the definite selection of kind, such as “Tin,” “Copper,” “Galvanized Iron,” etc., since this selection is best left to the specification writer, and if a change of material is necessary, after specifications are completed, this can be made with less confusion in an addenda specification.

C—*Completeness*: (a) If the specification is to be of any real value it must be a “Handbook” of complete descriptive information (the court of last resort) of the particular building under consideration. As the experience of the specification writer grows, his specification grows longer rather than shorter. Brevity is desirable, but not at the sacrifice of the complete, definite information required. The day is past when one boasts of constructing a half million dollar building on a ten page specification of “General Clauses.” (b) The office overhead is materially increased if *necessary* further detailed information must be daily sent out supplementing a meager specification. (c) Considering the specification as the building “Handbook” of definite information, eliminate generalizations, such as “laid according to the manufacturer’s standard specification” and instead set forth in concise form that specification—otherwise, an elaborate system of specification follow-up becomes necessary if the Contractor, Sub-Contractor, Field Superintendent, Clerk of the Works, Owner, etc., is to be fully informed on each material and its use. This applies particularly to work executed at a distance from the architect’s office and if beneficial and necessary then, is of equal value on the “Close-up Job.”

D—*Definiteness*: Eliminate ambiguity. If meaning and intent are not open to misconstruction, the greatest cause for misunderstanding is done away with.

E—*Convenience*: If the specification is to be used, its information must be readily and conveniently accessible. It shall be divided into chapters or headings covering the various trades—arranged as nearly in sequence of building operation as practical. Each heading or chapter shall be divided into numbered paragraphs with capitalized underlined headings. Each heading or chapter shall be preceded by a page index to paragraphs. The specification shall contain (page No. 2) a page index to heading or chapter indices.

F—*General Divisional Headings or Chapters, Etc.*:

(a) A serviceable cover repeating items (2) and (4) of title page (see “b”). (b) Page 1—Title Page. 1—Containing file number of building. 2—Containing name and location of building. 3—Containing name and address of Owner. 4—Containing name and address of Architect. 5—Containing date of specification. (c) Page 2—Index to General Headings. (d) Page 3—Heading, “Drawings, Levels, etc.” 1—Enumeration of drawings covering contract. 2—Establish datum for elevations on drawings. (e) Pages 4 to 12 inclusive—American Institute of Architects’ printed “General Conditions.” (f) Pages 13 to (?) inclusive—heading “General Description.” Specific clauses supplementing A. I. A. form of “General Conditions” applicable to the particular building. (g) Following shall be headings or chapters as described in “E.” (h) Close with heading “Instructions to Bidders”—give all information relative to filing of proposal. (i) The last page or pages shall be the “Proposal Form.”

G—*Method of Preparation*: (a) Complete written notes—the advantages of which are: 1—Time saved of stenographer in taking dictation and subsequent transmission of notes to rough draft for review and correction before copying. Time saved by specification writer in reviewing and correcting rough draft. 2—Ability at any time during preparation to readily review, amend, revise and correct completed headings or chapters during the preparation of subsequent headings enabling proper correlation of chapters. (b) Notes are made from “Master Copy” (volumes of loose-leaf bound books). The “Master Copy” specification contains all subjects collected from complete file of specifications covering fourteen years’ practice in all classes of buildings. Under each paragraph of each heading is collected all text and variations furnishing the specification writer with a complete “hole-proof” check on all items to be mentioned in the specification. The use of this master eliminates the usual “strain” of specification writing, namely, the fear of overlooking some more or less important item. Continuity is not broken by interruption. The typist has a duplicate of the master specification (these two copies are the only copies extant). The notes which are kept until the “job” is completed are always evidence in case of discovery of error as to responsibility (whether specification writer or typist and checker). (c) The master specification (in duplicate) is revised and added to from time to time to keep it up to date.

SPECIFICATIONS FROM A MANUFACTURER'S VIEWPOINT

BY J. B. W. GARDINER

Member of the American Society of Civil Engineers

FOR a manufacturer to express to an audience of architects his opinions of their specifications, is a privilege that carries with it a distinct element of danger. If those opinions are entirely innocuous they are not worth expressing and certainly are not worth reading. If they are to have any value, they must point the way to improvement and therefore must be frankly critical of things as they are. The danger lies in this very element of criticism; and all of us are not gifted with tolerance when it is our own preserves that are being poached upon by alien feet.

That I have permitted myself to be placed in a position of open criticism is due, however, to the fact that I do not recognize these preserves as being the exclusive property of the architect. In discussing an architect's specifications I do not consider that a manufacturer is an alien, treading upon hallowed ground. It is a fact, not fully recognized nor appreciated by the architect, although through the highly intelligent, persistent and effective work of men like Sullivan W. Jones of New York and D. Knickerbacker Boyd of Philadelphia, it is commencing to dawn on him in its true perspective, that there is a strong mutuality of interest, a community of purpose, between him and the manufacturer, and that this mutuality, this community, is reflected in the architect's specifications.

The business of the architect is the creation of a structure which is both artistic and permanent. That of the manufacturer of structural materials, is to produce a quality of materials that will make that structure permanent. The architect is therefore just as dependent on the manufacturer for existence as the manufacturer is upon the architect. Without the manufacturer the architect is not only utterly helpless but would never have been. Michelangelo with all of his transcendent genius would never have been heralded down the centuries, had he had no canvas for his brush, no tools with which to carve his colossal David that towers over the Florence Accademia, no materials with which to translate his dream of St. Peters into permanent stone. In view of this interdependence, it is therefore neither impertinent nor presumptuous for a manufacturer to comment in a spirit of friendly criticism on architects' specifications and to express his views as to how they might be improved.

No work, in any line of endeavor, can be truly successful if it is not the reflection of a correct principle. Certain principles of architecture are fixed and inflexible; and when an architect's design

is judged, one of the first considerations is its adherence to those principles. Any departure would properly be regarded as baroque. Can it be said, realizing the vast number of things that must be dealt with, that there is a principle to which an architect's specifications should conform? I think there is.

We have, as all of us appreciate, definite standards for certain classes of structural materials. These standards are simply expressions of the empirical work of the engineer. They represent the results of actual experience in the field of construction. The results obtained by a number of engineers in the use of a particular material have been collected, tabulated, analyzed and co-ordinated, and in a crystallized form, have been presented to the structural world as a standard. The work of analysis has been accomplished through our technical bodies such as the American Society for Testing Materials and the United States Bureau of Standards, which bodies have made exhaustive studies and tests to verify the empirical field work. Their work has been supplemented by the Affiliated Engineering Societies, by the American Concrete Institute, and by such trade organizations as the Portland Cement Association. All of this work, involving, as it has, the expenditure of millions of dollars and the time of the ablest minds of the country, has been carried forward in the interest of those who are charged with the responsibility of construction, the most important of whom from the standpoint of volume is the architect. Supplementing these standards, these same bodies have worked out tests—which are also standard—for the determination of the quality of the materials to which they relate. Not to recognize the value of these standards and these tests and use them, is therefore not only an economic waste. It is entirely stupid,—an adherence to that self-satisfied, self-sufficient and narrow professionalism that is the curse of every profession.

To return to my point after this apparent digression, I would state this as the fixed principle which should underlie every well-written and intelligent specification:

Whenever our recognized technical bodies have set up and standardized a series of tests designed to determine the quality of any structural material, those tests should be the basis on which that material is specified.

A careful discrimination has been made in enunciating this principle between standards and standard tests. This is necessary for two reasons:

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First. Architecture is a problem in economics as much as it is in construction. From the economic viewpoint, it consists in the use of the cheapest materials available that will fully and adequately meet a given need. In a given case it may well be that the standards set up by our technical bodies may demand a much better material than is required by the particular need to be met. It would therefore be poor economics to call for a product of the standard grade. This however does not vitiate the principle. The standard tests should still be the basis of the specification, as they afford the means by which the quality and grade that is needed may be determined.

Second. With certain materials (bituminous materials are a characteristic example) the technical societies have functioned so far as to work out a series of standardized tests for the determination of their quality, but have yet to complete their work by stipulating the requirements under these tests. There is left to the specification writer the task of creating a standard of quality for his own office by affixing to the tests required the set of constants that in his opinion are best adapted to the needs of the work.

It may well be doubted whether any architect will take serious issue with this as the correct principle of specification writing. Many can be found, however, who will take the utterly illogical position, that although they admit the soundness of the principle as stated, they refuse to apply it. Their reasons for so refusing are specious, their objections unreasonable.

The first objection raised by many is that it is a waste of time to place specifications on the basis of tests unless the materials furnished are subjected to test to determine their compliance with the specification. Tests are time-consuming and expensive, and are apt to hold up the work. The architect does not want to bother with them. If the real source of this objection were stated, it would in the great majority of cases be found in the fact that the architect does not know that such tests exist and certainly does not know what they are. His father and grandfather always specified materials just as he is doing, they built buildings that lasted and gave satisfaction and he does not see why he should not adhere to ancient practise and do likewise. This is his idea of conservatism. But it is not conservative. It is reactionary ignorance.

Tests need never delay the job one day nor in the slightest degree clog the machinery of construction. The architect can, and should, require materials to be tested at the source of manufacture. If a manufacturer delivers material to a job under a particular specification, there is an implied warranty that the material delivered complies with the specification. The burden is on him to show such compliance; it is not on the architect to show non-compliance. All the apparent difficulty will be done away with by inserting a clause in the specifications requiring that the material be tested by an acceptable laboratory, and that when delivered on the job

it should bear that laboratory's seal, label or other mark of identification. The architect should receive from the laboratory a test of the material and a statement that the material so identified complies with his specifications. No time would be lost, there would be no delay. The material comes on the job ready to be used and is approved. The architect knows what he is getting for his client's money.

Another objection raised is that the specification would be too long if this principle were followed. In the usual case the specification writer is addicted to the trade name fetish. It saves him time and work; he does not have to know anything fundamental about the material he specifies—and very often he does not know. All he has to do is write in a name and his problem is solved. Trade names cannot impart to a structure strength, beauty or serviceability. These are imparted by certain properties and qualities of materials, and the presence or absence of these properties and qualities are determinable by standardized methods of measurements. Trade names should be used only because of their relation to these measurements. In other words, there is no necessary incongruity between the use of trade names and the general principle stated. But a trade name should be used only because of its identity with a certain readily defined and definitely determined quality. The specification writer should require manufacturers of trade name materials to file with him a complete specification based on standard tests (where such tests exist) of their materials, so that when such materials are specified by name there is a definite standard against which they may be checked.

As a matter of fact the architect in effect does precisely this with certain basic building materials, although perhaps he does not realize it. In the case of Portland cement, for example, it is customary to specify one of several brands. A number of other brands not mentioned are equally acceptable. The reason is that the manufacture and the quality of cement have been standardized, that a number of brands are absolutely identical in their chemical and physical properties, and that in specifying any or all of these brands, a definite standard of quality as measured by certain standardized tests is really what is required.

This phase of the question is, however, negative and in a sense destructive. Sufficient has been said to serve for the purpose of illustration. The advantages of specifying materials along the line suggested are real and positive. One of the first positive advantages is that specifications so written will be clear and definite—both prime requisites. The specification gives the data on which the contractors and subcontractors make up their estimates of materials. They should be told exactly what will be required of them in such language that there can be no doubt of its meaning. A definite quality of every unit of the structure should be specified and the contractor required to furnish that quality. This fact seems so obvious as to not require statement, but an examination of the majority of specifica-

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tions will disclose as to the required quality of some of the materials mentioned, a degree of indefiniteness that is at least surprising. The contractor often does not know what to figure on, the manufacturers are themselves at sea; but all of them of course have exactly what is desired. The contractor may believe the man who makes the cheapest material—the wish being father to the thought,—and submit a figure on that basis, and if he gets the job, often succeeds in convincing the architect that his specifications really meant the material on which the bid was based. On the other hand, to protect himself, the contractor may have bid on the most expensive material. If he gets the job, his process may be exactly the same—he may work for the approval of the cheapest material that the indefinite specifications will admit—and get paid on the basis of the most expensive.

There came to my desk a short time ago, issuing from one of the largest architect's offices in the country, a specification which was a marvel of indefiniteness. The specification for waterproofing materials, for example, included three proprietary membrane systems, two proprietary interior plaster coat systems, four proprietary integral systems with the ubiquitous "or equal" clause at the end. What did the architect mean? What did he want? How and by what process could equality be established among asphalt, coal tar pitch, calcium chloride and iron dust treated with salammoniac? On its face it is ridiculous. No manufacturer has a panacea, a material of universal application. Some one class of the materials specified must have been better adapted to that particular job than the remaining class. If so, that class should have been specified alone and the others excluded. In this case, what did the contractor do? He figured on the highest priced material, and used the cheapest. The difference went into his pocket. But it came out of the pocket of the owner who was paying the architect for his knowledge of building materials.

Another phase of this same question is seen in the custom, all too prevalent, of writing very general and hence indefinite specifications and placing upon the contractor the real burden of the selection of materials, of filling in the gaps. This is obviously wrong from many angles. It places the selection of materials with those whose financial interest it is to purchase the cheapest material available. It is a direct avoidance or shifting of the responsibility the architect is being paid to assume. The architect has been retained by his client both for his artistic ability and for his knowledge of construction materials. Either the architect possesses a sufficient knowledge of materials to assume his own responsibility and make his own decisions or he does not. If he does, it is his business to use it. If he does not, he has not represented fairly the service he is able to render. Finally, such a practice in specification writing gnaws at the very roots of sound manufacture by putting a premium on inferiority and cheapness. If the architect has any ambition to improve construction methods and construction

materials, i.e., to produce better buildings, he could not select a more effective way of preventing the realization of that ambition than by passing to the contractor both the privilege and the responsibility of the selection of materials.

An equally important advantage of the method of specification writing advocated above is that it opens wide and keeps open the door to improvements in materials. The manufacturers in this country are not as a rule satisfied with existing building products. They realize their faults, their limitations, and are constantly trying to remove both. In some cases it is a question of a manufacturer improving his own product; in others new manufacturers, recognizing these faults and limitations, and seeing how they can be removed, produce a new and a better material. If the material happens to be in the nature of a mechanical unit so that the architect can readily see its operation, his pathway is not so difficult. If, however, the material is what might be termed one of the basic construction materials, where the determination of its quality cannot be shown by immediate and ocular demonstration, but can be proved by other and equally conclusive methods, a different situation exists. Such a material cannot possibly find its way into use unless the standardized methods of quality determination are recognized and are made the basis of the specification. At present it must be admitted that, in general, such a material would be discarded by the architect until it gets a reputation. It must be obvious that this condition can lead only to one end—absolute and complete stagnation. It slams the door in the face of progress and in effect denies that any improvement is possible. It is destructive of every incentive a manufacturer can have for the improvement and betterment of materials. Manufacturers have their ideals just as the architect has. But like the architects they are not altruists. No architect will, out of his own funds, build a structure only for the satisfaction of showing that he can make it more artistic, more beautiful, more permanent than his fellow practitioner. Nor is any manufacturer sufficiently foolhardy to expend his time, his brains and his capital merely to show that he can make a better material than another. If his material is better than another which performs the same function in a building, and if there are accepted methods by which this can be shown, the architect owes it to himself, to his profession, to his client, and to the manufacturer to examine the proofs of this superiority and to encourage rather than discourage its promotion. "Be not the first by whom the new is tried, nor yet the last to lay the old aside" is in many cases an excellent maxim to follow. Like every other rule of thumb, however, to have value its limitations must be realized and it must be applied with intelligence. Because a material is new forms no basis either for its use or its rejection. It is the architect's business to learn how and where to draw the line, to discriminate between the good and the bad without regard to age, the name they bear, or the publicity that has been given to them.

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If he does not do so his specifications will be redolent of the days when journeys were made on horseback instead of in a Pullman car.

Falling under the same general discussion is the matter of guarantees. The first question an architect asks about a material with the name of which he is not familiar is for how long it is guaranteed. A guarantee has grown to be a sort of stock basis for specifying certain classes of materials. The psychology behind it is that a manufacturer ought to have enough faith in his product to stand behind it with guarantees. On its face it sounds reasonable, but why should not the architect have enough faith in his judgment of materials to stand behind his selection? Most guarantees that are required are practically meaningless and are frequently a source of trouble both to the architect and the manufacturer. In specifying any class of materials whose quality and serviceability are predeterminable by standardized methods, there is no reason for guarantees. They are only of value where quality cannot be determined by any method of measurement other than that of experience under service conditions. If a material is good, guarantees are unnecessary as they cannot make it better. If it is not good, a safe deposit box full of guarantees cannot cure its inherent defects. What specifications need is less mention of guarantees of material and a closer definition of quality of material. The facts are that if the proper material is specified for a given purpose the desired result will be obtained if it is properly installed. If a wrong material is specified, a guarantee will not remedy the evil no matter how thoroughly the installation work may be done. In neither case is it apparent how guarantees can be of benefit.

This does not refer, of course, to guarantees as to quality of workmanship. These are required to insure the needed supervision of labor. The ineptitude, the carelessness of the human element must be guarded against, and the most effective way of doing it is by appropriate guarantee requirements that will penalize poor workmanship.

That this attitude towards material guarantees is not unreasonable, but is in fact supported, though perhaps unconsciously, by existing practice, is shown in the use of concrete. It is doubtful if any one has ever seen in any architect's specification a requirement that the contractor shall guarantee either the quality of the cement used or that the concrete shall have a minimum compressive strength. This is because the architect is dealing with standardized materials, standardized methods of mixing, standardized proportions, standardized methods of curing. These are known to give definite results. It is a question only of workmanship, of such supervision as will insure that the mechanics of the specification are carried out. But these things are standard only because there are standard methods of measurement. If there were no such methods there would be no standards. If this practice is proper and logical in the case of concrete, it is equally

logical in handling other classes of materials where standardized methods of quality determination exist, and it should be so extended. It is human nature to want to get something for nothing. If two materials of equal quality are offered at an equal price, one guaranteed (whatever that may or may not mean), the other not, we feel that in using the guaranteed product we are getting something for nothing, something extra thrown in. My own experience has been that when I get something for nothing, intrinsically it is worth precisely what I paid for it.

Many materials, as well as a wide range of mechanical appliances, electrical equipment, patented articles, etc., of course, enter into a building and are of such character that no standard methods of measuring their quality have as yet been worked out. Much has been said in this discussion that naturally has no application to such items as these. Such materials must either be specified by trade name or by such physical or chemical properties as commend themselves for the particular use to which they are to be put. Any tests applied to such materials will of course be purely arbitrary. Time test, service records, past performance, must of course be the guide and must form the basis of specifications. But as time passes, the number of such materials is growing less and less. Eventually it is inevitable that practically all of the important materials that enter into construction will be put on a plane where their quality can be definitely described by reference to generally accepted standards. As rapidly as this is done, the method of specifying should be changed.

In concluding this discussion of architects' specifications, it might not be out of place to say a word as to a desirable relationship between the architect and the manufacturer. The products of the manufacturer and of the architect both have their origin in the vision and the imagination of their creators. They are both mind products visualized; and the manufacturer is just as proud of his conception as is the architect of his. The architect has no monopoly of ideals. The manufacturer has his as well and I venture the opinion that they are just as high as those of the architect. The only difference lies in their methods of expression. The architect practices his business to make money. So does the manufacturer. But with either is money the only end or indeed the most satisfying end. The balance sheet is only an evidence of success; it is not success itself. The manufacturer strives to produce the best materials of their class, works and tests and experiments to improve them, to make them more permanent and better functioning. That is his real success,—playing his part in the creation of a better building. Is not the ideal of the architect the same? Is he not exerting his force and power and the training of his mind to the same end? Between them then there should be a complete meeting of the minds, a mutual recognition and respect for a common purpose and a common ideal, a co-operative and concerted effort in the interests of sounder and better construction.

THE SPECIFICATION WRITER AND MANUFACTURERS' LITERATURE

BY SULLIVAN W. JONES

Technical Director, Structural Service Committee, American Institute of Architects.

DURING the last three years the Structural Service Committee of the American Institute of Architects has been devoting a constantly increasing amount of time and energy to the improvement of the architect's specification. The policy guiding the work has been that of making available to the architectural profession all existing information which would aid in writing intelligible and enforceable specifications—to furnish the substance of the specification rather than the specification itself.

No attempt has been made to unify practice with respect to the form and arrangement of specifications. The absence of any set logical arrangement or sequence of divisions, the haphazard manner in which subjects are dealt with, the duplications which characterize many specifications and unavoidably result in inconsistencies and obscurity, indicate beyond peradventure the real need for some competent body to undertake this job.

The Structural Service Committee may have to do it for the architectural profession. But the field is larger than that. The engineers, big industrial corporations, and others who write purchase specifications for buildings, ought to be brought into the work.

The Structural Service Committee has done and is doing much collaborative work with other technical bodies and manufacturers in the preparation of standard specifications of a number of classes of materials and equipment, as for example, terra cotta, limestone, glass for glazing, concrete, plastering, elevators, refrigeration. The volume of this work is constantly increasing.

Then, of course, the work of the Committee on Standardization through the American Engineering Standards Committee, United States Bureau of Standards, the Division of Simplified Practice of the Department of Commerce, the Federal Specification Board of the Bureau of the Budget, the National Lumber Manufacturers Association, and the United States Forest Products Laboratories, embracing specifications, standards of sizes and qualities, codes, research and nomenclatures all finally focus in the specification. The product of the whole vast standardization movement and of scientific research is the material out of which specifications are constructed.

This work also furnishes the criteria by which to judge the relative suitabilities and worths for specific purposes of competitive products.

But the Committee's prime function is that of opening up the channels through which may flow information and data to the architect and specification writer which is needed to make wise decisions and intelligent use of the vast variety of things and methods employed in the manufacture of the modern building. The ability to make wise decisions with respect to materials and their utilization is of course an essential prerequisite to the writing of an adequate specification.

One of the channels—a very important channel—and one of great potential value to the specification writer is the manufacturer's advertising literature. The term literature is used in its broadest sense and embraces all literature published by manufacturers, whether it be of the purely promotional type or largely technical. This channel has been choked by the "each man for himself" policy forced upon each manufacturer by the behavior of others in the struggle to get through. This situation has been described as the result of "individual initiative run riot." Whatever the cause, the result is that perhaps 90% of the printed matter sent to architects is of no use or interest to the architect and therefore quite worthless to the manufacturer. Moreover the waste involved is enormous. The cost of this futile effort on the part of manufacturers to interest the architect is charged to the consuming public and becomes a part of the principal invested in buildings on which the users of buildings must pay interest forever.

In addressing the specification writer it is unnecessary to elaborate this statement, even in the interest of emphasis. The specification writer knows if any one does, what a large percentage of the daily deposit of advertising in the office goes into the waste basket. He knows, if any one does, how valuable this advertising might be to him if it could be made really informative and reliable. To make this advertising progressively more valuable to the architect is the purpose of the work the Structural Service Committee is doing with producers through the mechanism of the Producers Section.

The Producers Section was created as the result of action taken by the 55th Annual Convention of the A. I. A., which adopted the following resolution:—

"Whereas the Joint Conference on Better Advertising to Architects between the Board of Directors of the American Institute of Architects and the Building Materials Producers of the United

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States held at Indianapolis and reported in the Journal of the A. I. A. of April, 1922, and the Conference in Chicago, held June 5th, and 6th, 1922, has demonstrated the great desirability of a better understanding among Architects and Producers as to their common interest in the characteristics, presentation, and appropriate utilization of products entering into construction, be it

"RESOLVED, by the American Institute of Architects, in 55th Annual Convention assembled, that the Structural Service Committee of the American Institute of Architects be authorized to create a Producers Section of the Structural Service Committee as a sustaining body to collaborate in the following duties:

"A. To advise and counsel with manufacturers, who may so desire, on the character of their advertising, as to size, form and content.

"B. To assist in furthering the use, by Architects and Producers, of the Standard Construction Classification adopted by the American Institute of Architects.

"C. To promote sincerity and reliability of statement in advertising."

This resolution was the outcome of more than eighteen months of study by a joint committee of architects and producers appointed by the November, 1921, Indianapolis conference between the A. I. A. and the building materials producers of the country on "Better Advertising to the Architect." This conference signalized the fact that the A. I. A. had become officially cognizant of the potential value of advertising as an information medium and the waste resulting from the failure to develop that value.

Following the adoption of the resolution quoted above by the 55th Convention of the A. I. A., the Producers Section was organized and the Committee began to render the service of advice and counsel with manufacturers on their advertising literature intended for architects.

The Committee is confronted in this connection with a double problem; first, how to reduce the volume of direct by mail advertising, and second, how to make the remainder of such value to the architect that he will preserve it for reference purposes.

The importance of reducing the volume of direct by mail advertising is clearly demonstrated by the results of a test made by the Committee last summer. Several architects' offices were requested to save every piece of direct by mail advertising received during a two weeks' period. At the same time a survey was made of advertising in the five leading architectural periodicals. The data secured established the fact that advertisers collectively *hoped* that each architect would read each working day the equivalent of 74 pages of periodical advertising. Seventy-four pages of an interesting connected story would not be an unusual daily dose, but when the literature deals with perhaps 100 subjects and is kaleidoscopic in style and method of presentation, the reading becomes an arduous task. Ad-

vertising in such volume defeats its own ends because of the volume. It isn't read. No architect can or should be expected to devote the time necessary to sift out of the mass that which appears to him to be worth saving. Result: the worthless material more often than not carries the good with it into the wastebasket.

But suppose that instead of 90% of the daily deposit of advertising in the architects' office being worthless, the same percentage was sufficiently valuable from the informational standpoint to justify preservation, would it not lose much of its value to both the architect and the advertiser if it could not be readily found when wanted?

A survey of filing systems in architects' offices made by the Committee indicates that most offices have some sort of an information file; but that most of them are unsatisfactory to the architects who maintain them. The equipments consist of everything from a large number of standard vertical file sections to open shelves with catalogs piled upon them. The Committee felt that it could not with good grace ask manufacturers to so alter the character of their printed matter as to make it more useful to the architect unless it could at the same time say that the chances of this better advertising being preserved and used were increasing.

In order that it might make this statement to advertisers the Committee prepared a Classification which was adopted as standard by the A. I. A. and is now published as A. I. A. Document 172. With the co-operation of the manufacturers of filing equipments the Committee has standardized a filing system to be used with this standard classification. The Committee now urges manufacturers to index their advertising by printing on the front cover of each publication the A. I. A. standard file number. This is being done by an ever increasing number of firms. I need not emphasize the importance, as a time saving measure, of installing the standard file and taking advantage of the manufacturers' co-operation in indexing his advertising.

The Committee also operates an information service for the benefit of the architectural profession. This service consists in answering questions relating to methods, materials and practices. Often the question asked cannot be answered out of the information in the Committee's files. In such cases the Committee taps all known sources of authentic data upon the subject and in addition sends out a questionnaire to a selected list of architects. The answer to the question, therefore, comprehends not only the pooling of actual experience but also all available, technical knowledge. The information to answer some questions does not exist. In such cases the subject, if of sufficient importance, becomes the matter of the formulation with some research organization of a program for investigation and study.

Up to the present time this information service has been rendered free to all comers. The cost, however, has become so great that the A. I. A. can not foot the bill, and it is expected that the service will be so organized after the first of the year that it will be self-supporting.

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It has been necessary to outline rather completely the work of the Committee in order to indicate the extent of the service available to specification writers and the manner in which the service is being directed toward aiding the specification writer through improving the manufacturers' advertising. The time required to bring this effort in connection with advertising to full fruition depends largely upon the extent to which the specification writer co-operates with the Structural Service Committee. To answer the question which this statement suggests and which will doubtless occur to the interested writer—"In what way can I help?"—let me conclude by making a few definite suggestions.

When a specification writer receives a piece of advertising which is of little value to him and is therefore waste, he may either write to the manufacturer suggesting that in the interest of making his advertising more effective in capturing the architect's interest he ought to consult with the Structural Service Committee, or he may make the same suggestion to the manufacturer's representative on the occasion of his next call at the office.

If the specification writer prefers, he may write a memorandum to the Committee with reference to advertising which he believes might be improved from the standpoint of its value to him, and the Committee will make the initial move with the manufacturer.

The specification writer should utilize to the full the Committee's information service. Questions as to existing standards, the experience of others with materials and methods, recommended practices, structural problems, the behavior of materials under certain conditions, and any of the numberless other matters which are often perplexing should be referred to the Committee. The larger the number of such questions asked and answered, the larger becomes the Committee's store of information and the more readily will questions of the future be answered; and the greater becomes the Committee's prestige in the eyes of the manufacturer.

The Committee makes the following very general recommendation to manufacturers with respect to size, form and content of advertising to architects.

If all architects, specification writers and draftsmen will familiarize themselves with these recommendations and constantly bring them to the attention of manufacturers and their representatives, much will be achieved toward hastening the general adoption of these suggestions.

Advertising which contains technical information

and is intended to be preserved for future reference should fulfill the following general requirements:—

Substance. The piece of printed matter should present the facts which an architect is likely to require. Authentic reports of tests should be included. If drawings are necessary they should be reproduced accurately and at an indicated scale.

Size and Form. The American Institute of Architects recommends that advertisers adopt 8½"x11" as the size for all catalogs, circulars and other publications. It also approves as a minimum size 7½"x10⅝". Either of these sizes may be folded once and saddle stitched to open flat in the file.

Each piece of advertising should have printed on its cover or front page the correct index number taken from the Standard Classification. The index number should be secured from the Committee on Structural Service and printed both on the upper left hand corner and lower right hand corner to read from the right and left sides respectively.

Clarity of Statement. All statements should be as brief and to the point as adequate presentation of the subject will permit. The arrangement of information should be such as to facilitate reference and ready comprehension. Irrelevant matter and testimonials from persons not especially qualified to pass judgment should be eliminated.

Appearance. Advertising should be attractive enough, measured by the architect's standards, to capture his attention and obtain a reading. Pictorial and other illustrations should be so selected and of such a character as to establish some desirable association between the product and the character of work in which the product is used. Heavy, ornate and expensive covers should be avoided.

Compliance with these general rules does not necessarily give to advertising its fullest value, or, indeed, any value. Each piece of literature is a separate problem for study. Every subject may be presented in any one of a number of ways, but there is always one presentation that is best from the standpoint of the architect's needs, and the architect knows better than any one else just what his needs are. The Committee functions as the medium by which the manufacturer may secure not an individual architect's opinion in regard to a piece of proposed advertising, but a collective architectural opinion.

Note—All communications intended for the Structural Service Committee should be addressed as follows, Structural Service Committee, American Institute of Architects, 19 West 44th St., New York City.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION PART X.

By OTTO GAERTNER.

In this series of notes Mr. Gaertner of the staff of McKim, Mead & White, Architects, will treat of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—ED.

Garages (Continued)—But of the ordinary garages, built without the staggered floor system, those with a ramp have many advantages over those with elevators. The ramp makes it possible for automobiles to ascend under their own power, or to be towed upward from the street to any floor of the building. Stairs and elevators may be omitted and the initial investment materially decreased, since the cost of the ramp is very much less than that of the stairs and elevators. The yearly interest on the difference can be considered as additional profit instead of being added to the cost of overhead. Likewise, there is a great saving in overhead in the maintenance column because the high cost of maintenance of the elevator, the cost of an operator, and the maintenance of the stairs, such as painting, etc., is eliminated. The cost of maintenance of the ramp is small.

It is true that in the ordinary garage each ramp is longer, taking up about the storage space of ten or twelve cars, but that is no more than is required for two of the shorter ramps needed for a complete story rise in the other type of garage. Of course, the disadvantage of the longer ramp being that, as before mentioned, it is more difficult to incorporate in the plan, it becomes more difficult still as the floor area of the building decreases. But if the space for the ramp is to be had, consider the advantages of the ramp in the conducting of the business as compared to a business conducted in an elevator garage even when enough elevators are provided to give as rapid a service.

People have a dread of driving on an elevator and are quick to criticize the management on account of delays. They will patronize the garage where they can come and leave rapidly by means of a ramp. As the number of elevators required in the building increases, the more satisfactory and the cheaper does the ramp become in comparison. An increase in the number of elevators again increases the initial cost, the cost of maintenance and the loss of car storage space.

The slightly larger loss of car storage space in the ramp system over the single elevator system is not a disadvantage since the loss of storage rental is more than made up in time saved and convenience in conducting the business. Also as the number of elevators increases, even this seeming disadvantage is lost entirely. And generally there is more than one elevator, for if only one is provided and it breaks down, the whole garage business may be at a standstill, causing much loss. For instance, if taxicabs are stored on an upper floor and cannot be taken out, the loss to their owners must be borne by the garage owner based on an hourly fee. Therefore, there are usually two elevators, one being used only in emergencies. It represents a certain amount of dead capital when it is not in use. Also, it entails additional maintenance cost. It is important that the problems involved in each individual garage be studied before the ramp system is designed, as the question of single-track or double-track ramps and the question of one or two single, one-way ramps must be decided. Often a double-track ramp is provided when a single-track ramp will answer the purpose, but the error has the advantage of providing additional facilities needed in case of a change in the kind of business or during emergencies.

(To be Continued)

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Panel Boards and Cabinets—Catalog with thumb index; punched for loose-leaf filing if desired. Complete specification data, directions for ordering, dimensions, diagrams covering all types of panel boards and cabinets. 70 pp. 8 x 10½ in. Sprague Electric Works, of General Electric Co., 527 West 34th St., New York.

Marbleloid, Universal Flooring—Illustrated brochure showing many typical installations with data sheets, covering hospitals and schools. 32 pp. 7 x 10 in. The Marbleloid Co., 461—8th Ave., New York.

Electrical Wiring Specification—How to lay out a completely wired home, also specifications for apartment houses, floor plans and complete specification data. 12 pp. 8½ x 11 in. Bryant Electric Co., Bridgeport, Conn.

Soss Invisible Hinges—Convenient catalog showing complete line of invisible hinges for cabinet work and furniture, as well as for use in building construction. Shows new type of hinge requiring only two screw holes. 20 pp. Soss Mfg. Co., Grand Ave. and Bergen St., Brooklyn, N. Y.

The Uses of Mineral Wool in Architecture—Booklet on the subject of insulation, fireproofing, sound deadening, etc. 24 pp. 5 x 7 in. United States Mineral Wool Co., 280 Madison Ave., New York.

The Fire on the Hearth—Catalog of fireplace dampers and other specialties for building good wood burning fireplaces. Cross sections, ash removal, tables of sizes, etc. 12 pp. 5½ x 8 in. H. W. Covert Co., 137 East 46th St., New York.

Ultra Violet Ray Sterilization—Service bulletins, loose-leaf in convenient cover, covering the subject of water purification for drinking, swimming pools, ice manufacture, etc. 8½ x 11 in. R. U. V. Co., Inc., 165 Broadway, New York.

Kenney Curtainless Shower—File and reference sheet showing roughing-in measurements on stationary models. Also descriptive booklet of portable as well as built-in models. Kenney-Cutting Products Corp., 507—5th Ave., New York.

Roofing Material Bulletin—A. I. A. standard classification File No. 12-B-1. Covers properties of various asphalts including specifications. Also data on felt and other roofing materials. 16 pp. 8½ x 11 in. Gardiner & Lewis, Inc., 30 Church St., New York.

Viking Reflector and Sign Bulletin—Showing typical installation as used in New York Trust Company building. Diagrams. 4 pp. 8½ x 11 in. Viking Sign Co., 422 West 42nd St., New York.

Swimming Pool Design and Equipment—Specification Bulletin indexed for detailed estimates. Sectional drawings showing improved construction. J. Francis Booraem, 52 Vanderbilt Ave., New York.

Economy Drawing Tables and Sectional Filing Cases—Catalog N. Shows full line of special drafting-room furniture and equipment. Profusely illustrated. 32 pp. 7 x 10 in. Economy Drawing Table & Mfg. Co., Adrain, Mich.

Interphone Specifications—Collection of bulletins covering subject of interior telephone layouts, installation, maintenance, etc. Diagrams and much engineering data. 8 x 11 in. Western Electric Co., 195 Broadway, New York.

Asbestolith Fireproof Flooring—Data sheet with specification information. Diagram showing method of laying. Fire tests, etc. 8 x 11 in. Asbestolith Mfg. Co., One Madison Ave., New York.

Paint Milcage—Illustrated brochure in duotone with detailed specifications for finishing various woods, concrete, brick, plaster, wall board, etc. 60 pp. 8½ x 11 in. The Hockaday Co., 1823 Carroll Ave., Chicago, Ill.

Boca Solid Steel Sash—Catalog E. 22. Diagrams, sections and complete data for specification of various types of steel windows and doors. 24 pp. 8½ x 11 in. Bogert & Carlough Co., 520 Straight St., Paterson, N. J.

Bostwick Service Sheet—This service sheet covers the subject of exterior and interior use of metal lath in connection with stucco and plaster. Sectional drawings. Bostwick Steel Lath Co., Niles, Ohio.

Corrugated Wire Glass—Catalog No. 8. Covers subject of skylights of different types for application in various classes of buildings. 20 full page plates and drawings. Complete specification data. Pennsylvania Wire Glass Co., Pennsylvania Bldg., Philadelphia, Pa.



TEMPLE OF JUPITER STATOR AT ROME
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE".

On the other side of this sheet is shown the restoration of the Temple of Jupiter Stator, also known as the Temple of Dioscuri or of Castor and Pollux at Rome. This temple is regarded as an especially fine example of the Corinthian order. The capitals are unusually good. The remains of this temple consist of three columns with their entablature; the columns are 47.65 feet in height and the lower diameter is 4.84 feet. The height of the entablature is a small fraction less than one-quarter the height of the column. The intercolumniations are 1.5 times the diameter of the columns.



PENCIL SKETCH BY H. VAN BUREN MAGONIGLE

The admirable sketch reproduced on the other side of this sheet is one of the large number made by Mr. Magonigle when he was abroad many years ago as winner of the Rotch Travelling Scholarship. It may well be studied as an example of the type of sketch that is most helpful to the student to make; as well as a delightful presentation of an interesting subject.



OLD JEFFERSON MARKET, NEW YORK CITY. DRAWN ON STONE BY HUGH FERRISS.
LITHOGRAPH PULLED BY BOLTON BROWN.

The character of a bit of old New York has been especially well rendered in the lithograph reproduced on the other side of this sheet. This drawing was made by Hugh Ferriss with lithographic pencil directly on the stone and the proof was pulled by Bolton Brown. It is one of a series of studies of old buildings that show Mr. Ferriss's sense of pictorial values as well as of the character of architectural subjects.

PENCIL POINTS

Vol. IV, No. 1

PLATE IV



BUTCHER'S ROW AND THE WOOLWORTH BUILDING, NEW YORK CITY.
PENCIL SKETCH BY CHESTER B. PRICE.

The pencil sketch by Chester B. Price which is reproduced on the other side of this sheet shows the simplification necessary in rendering large buildings and at the same time suggests the beauty of detail and conveys the impression of a satisfactory statement. The structures in the foreground are equally well handled in their own way and the whole composition is masterly and well carried out.

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RAY D. FINEL, Advertising Manager

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AWARDS IN CLOCK CASE COMPETITION.

DESIGNS of unusual interest and merit, in the opinion of a distinguished jury of artists and art critics, were included among the hundreds submitted from all parts of the United States, Canada, and Great Britain, in the contest in clock case design conducted by the Cloister Clock Corporation of Buffalo, N. Y. The aim of the Cloister Clock Corporation in arranging the competition was to stimulate the creation of designs purely American in character, and therefore in harmony with a timepiece which is mechanically a distinctive American achievement. The clock which will be contained in the new cases is a radical departure from usual practice, being operated on the electro-magnetic principle by a small dry cell which functions for a year or more without replacement.

The Cloister Clock Corporation announces the winners to be: Class A: E. Stetson Crawford, The Enclosure, Nutley, N. J.; George F. Parker, Newburyport, Mass.; Henry A. Goldsmith, New York City. Honorable mention: H. P. Koeppe, Fort Worth, Texas; Marie Derge, Berkeley, Cal.; Hermann A. L. Behlen, New York City. Class B: Fred A. Vuilleminot, Toledo, Ohio; G. Alessandrini, Grand Rapids, Mich.; Richard Mueller, New York City. Honorable mention: Frederick L. Gerhold, Cincinnati, Ohio; A. Reimherr, Bridgeport, Conn.; Henry A. Goldsmith, New York City. Class C: Ruth Koch Gerth, Minneapolis, Minn.; second, Ruth Koch Gerth; George Lloyd Barnum, Chicago. Honorable mention: F. Cowles Potter, Rochester, N. Y.; Edwin Dickman, Riverside, Cal.; Frederick L. Gerhold, Cincinnati, Ohio. The prize money, \$1,200 in all, was divided into three first prizes of \$250 each; three seconds of \$100 each, and three thirds of \$50 each. The award of honorable mention carries with it the privilege to the company of purchasing the design. Class A prizes were offered for designs of an upright mantel clock case of wood, greater in height than breadth. Class B called for designs of the same proportions, to be executed in metal. Class C designated mantel clock cases of wood greater in breadth, at the base, than in height.

The jury of award consisted of Charles Dana Gibson; Richard F. Bach, Metropolitan Museum of Art; Albert M. Kohn, jeweler; C. Matlack Price, editor and art critic; and Russell F. Whitehead, secretary of the Architectural League.

JURY OF AWARD NAMED.

THE following five architects have consented to serve as members of the Jury of Award in the competition for the prizes offered by the American Face Brick Association for designs for architectural features of face brick suitable for the grounds or gardens connected with residences; Mr. Alfred Hoyt Granger, Chicago, Ill.; Mr. Russell F. Whitehead, New York City; Mr. George A. Chapman, Minneapolis, Minn.; Mr. Frederick W. Garber, Cincinnati, Ohio; Mr. Edward Stotz, Pittsburgh, Pa. The purpose of this competition is to stimulate a wider interest in the designing of garden features of this kind and to secure designs that will afford helpful suggestions for the use of face brick in the construction of such features.

An announcement and full statement of the conditions of this competition will be found on another page of this issue. This competition is being conducted by the publishers of PENCIL POINTS, is open to all architects, architectural draftsmen, architectural students, and all others desiring to compete. The prizes aggregate \$1,550. The competition closes at noon, February 5, 1923, and the judgment will take place in Chicago shortly after that date.

A BOOST FROM TEXAS.

HERBERT M. GREEN CO., architects of Dallas, Texas, not only like PENCIL POINTS but have adopted a novel manner of passing the good word along. We quote from a letter just received: "We have just instituted the practice of putting the following postscript on letters which we have occasion to write in answer to applications for positions in this office: 'P. S.—Do you read PENCIL POINTS?' We think that PENCIL POINTS is the best magazine that a draftsman can read and feel that a draftsman who does not read it is missing a lot."

T-SQUARE CLUB, PHILADELPHIA.

THE program for the December 13 meeting of the T-Square Club, Philadelphia, included an illustrated talk by Mr. Albert Kelsey on the subject, "What I Saw from the Dome of St. Peter's."

The meeting was the first "Ladies' Night" of the season, and members were invited to have ladies accompany them, both to the talk and to the dinner which preceded it.

There was also an exhibition. The occasion was entirely informal. Dancing followed the talk.

PERSONALS.

CHAS. C. CORNFELDT has opened offices for the general practice of architecture at 462 Woodrow Boulevard, Toledo, Ohio.

HARRY J. FARWELL, Architect, has removed his offices from 190 Massachusetts Avenue to 35 Ford Avenue, Highland Park, Mich.

HAROLD M. SHEPHERD has opened an office for the practice of architecture at 3-238 General Motors Building, Detroit, Mich.

LAWRENCE S. FUNKE has opened an office for the practice of architecture at 368 Peachtree Street, Atlanta, Ga.

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COMPETITION FOR LAMP DESIGN

A COMPETITION for a lamp design is announced under the auspices of the Art Alliance of America by the Decorative Arts League. First prize \$300, second prize \$200, third prize \$100. Three additional prizes of \$100 each may be awarded for meritorious designs. Contest open to everyone. Closing date February 1, 1923. Competition program may be had by writing to Lamp Design Competition Committee, Decorative Arts League, care of Art Alliance of America, 65 East 56th Street, New York City.

AWARDS IN HOME GARDEN COMPETITION.

THE Society of Little Gardens, with the object of stimulating interest in the artistic development of the small home garden, recently conducted a competition to be judged from photographs of actual small gardens. The Jury of Award consisted of Miss Harriet Sartain, Miss Elizabeth Leighton Lee, and Miss Elizabeth Wilson Fisher.

One prize of fifty dollars and two of fifteen dollars each were offered. The prizes were awarded as follows: First prize, to Miss Florence M. Underwood, Lake Forest, Ill.; second prize, to Mrs. Rademacher Pickenbach, West Orange, N. J.; third prize, Messrs. Kirkhuff and Schaaf, Santa Barbara, Cal., for two separate photographs of city house fronts. The designs being considered of equal merit, the prize was divided between them. A number of honorable mentions were awarded.

The work of this society, of which Mrs. Charles Davis Clark of Philadelphia, is president, is highly commendable, for it arouses interest in the gardening possibilities of the area around the average American home, and does much to make our homes and cities more livable and beautiful.

ANNUAL DINNER OF YORK & SAWYER'S OFFICE.

THE third annual dinner of the office of York & Sawyer was held on the evening of December 20 at Delmonico's. The members of the firm, Messrs. York, Sawyer, Benedict, Franklin and Ayres, were the guests of the force. Mr. Slocum Kingsbury was master of ceremonies. He first presented Mr. Wehrell who told of the beginning of the partnership of York and Sawyer as he had heard the story. A very enjoyable meal then followed. The courses were interspersed with songs in which all joined heartily. Novelty hats, balloons, streamers, etc., added to the gaiety.

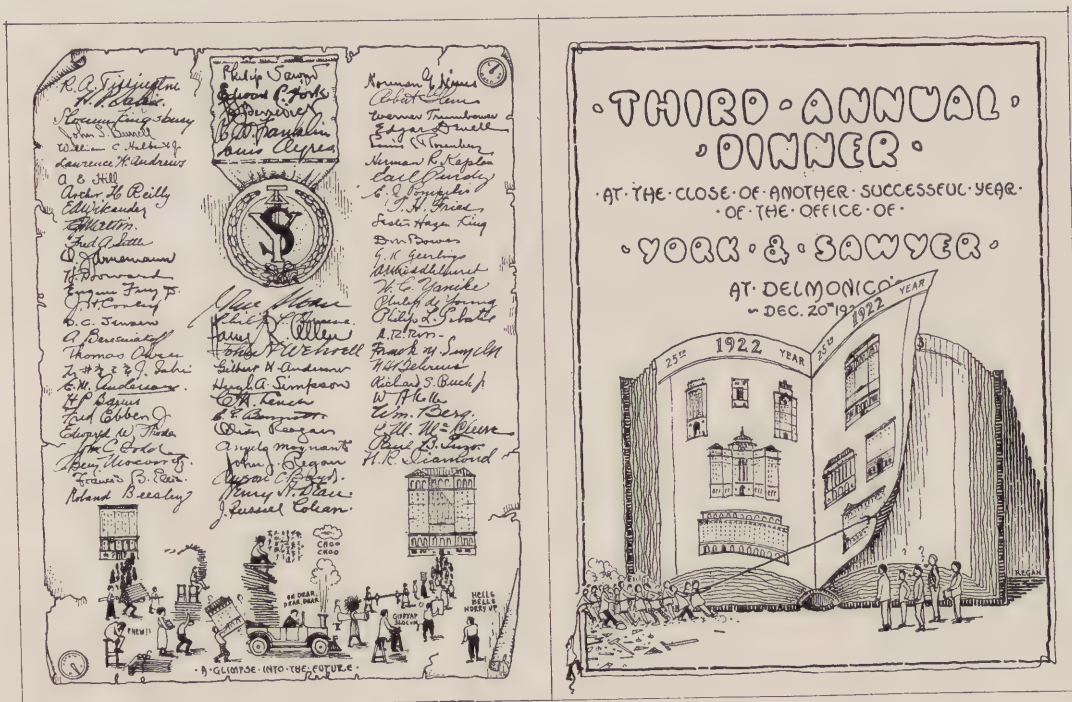
Mr. Sawyer told of some humorous incidents in which Mr. York and he figured in the earlier years of their association and Mr. York responded in an equally happy vein.

Brevity was the order of the day in the matter of speeches and Mr. Kingsbury called upon only a few others. They were Messrs. Nims, Ross, Allen, Middlehurst and Regan, whose lively remarks kept the company in high spirits. Vocal solos were well rendered by Messrs. Frey and Behrens, and a whistling number was given by Mr. Reilly. Mr. Tislington at the piano and Mr. Sabatie with the violin supplied the accompaniment.

At the conclusion, Mr. Sawyer invited all to bring their friends to a theatre party to be given by the firm on the evening of January 22. The entire front part of the orchestra of the Booth Theatre has been reserved for the party.

Underlying the fun of the evening was a feeling of pride on the part of all present, not merely in the continued success of the firm but in being led by a group of men who have inspired the admiration and loyalty that is the spirit of the office.

Below is shown, at reduced size, the design for the cover of the program of the annual dinner of the office of York & Sawyer. This design by John J. Regan was the winner in the competition held among members of the staff. The members of the firm acted as judges. This illustration was made from the original tracing from which the program covers were printed and then enlivened by the use of colored pencils. The idea is clever and well worked out, showing the members of the staff all pulling together to close a successful year's business, the twenty-fifth year of the partnership of Mr. York and Mr. Sawyer. The members of the firm are represented in the group standing at the right. On the back cover, are seen the autographs of the members of the firm and of the staff.



PENCIL POINTS



John Mead Howells



Raymond M. Hood

JOHN MEAD HOWELLS AND RAYMOND M. HOOD WIN FIRST PRIZE IN CHICAGO TRIBUNE COMPETITION.

THE first prize in the Chicago *Tribune's* \$100,000 competition has been won by John Mead Howells and Raymond M. Hood, associate architects, who thus become the architects of *The Tribune's* new \$7,000,000 building. Mr. Howells is the son of William Dean Howells, the great American novelist.

Eliel Saarinen of Helsingfors, Finland, wins the second prize of \$20,000. He was winner of the second prize in the competition for the peace palace at The Hague. His associates in the preparation of *The Tribune* design were Dwight G. Wallace and Bertell Grenman of Chicago.

The Chicago architectural firm of which William Holabird and Martin Roche are the heads wins the third prize of \$10,000.

The remainder of the total of \$100,000 in prizes goes in \$2,000 allotments to ten recognized American architects who were invited to enter the competition and who did enter.

The new structure will be named the "Tribune Tower." The design will be executed in stone of a light color. Its style is a Gothic expression of the American skyscraper theme; in other words, an expression of the structural fundamental of the theme.

The design by Mr. Howells and Mr. Hood is a unit, not a tower and a building, it is all one building, a practically square tower four hundred feet high. It climbs up into the air naturally, carrying up its main structural lines, and binding them together with a high open parapet. The result is an effect both towering and militant—but beautiful and instinct with grace.

The architects have let the blue sky into the embattled crown of the building. From every point of view there will be glimpses of sunlight and of cloud between the eight flying buttresses, which give power to the culminating feature.

By the combined dignity and spirituality of their con-

ception the architects have lifted the new home of *The Tribune* out of the category of the commercial and made it a building which will be an ornament to the city and an inspiration to all who look upon it. In this, as in other ways they fulfil the hopes of *The Tribune* in instituting this competition.

SLATE INDUSTRY MEETINGS.

MEETINGS of the Slate Industry will be held in New York City at the Commodore Hotel on Monday and Tuesday, January 22 and 23, 1923, under the auspices of the National Slate Association. Operators of quarries producing slate, representatives of mills and plants manufacturing slate products, and any one from any branch of the slate industry will be welcome.

Dr. Oliver Bowles, of the U. S. Bureau of Mines, will preside at the opening session. President Keenan and the Board of Directors will announce the winning slogan and insignia. There will be a discussion of quarry and production problems, and of new uses of slate. Opportunity will be given equipment manufacturers to demonstrate new apparatus and methods. As advertising, research and other activities of 1923 will be decided upon, these meetings will be important to everyone who wants more slate used.

"SOLID BRASS."

IN A paper contributed by George C. St. John, Vice-President of U. T. Hungerford Brass & Copper Co., on "Substitution, the Fraud of the Day," attention is directed to the extent to which articles such as locks, bolts, doorknobs, etc., etc., are sold as solid brass when as a matter of fact they are iron or steel plated or dipped with brass. Corrective measures are urged, including legislation, and the education of dealers and salesmen. Mr. St. John urges that buyers, if they want solid brass, should specifically demand it, and should insist that invoices or cash sales slips specify exactly what is being sold, otherwise it may be difficult for the purchaser to secure refund or other redress later.

THE MART

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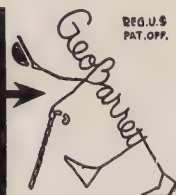
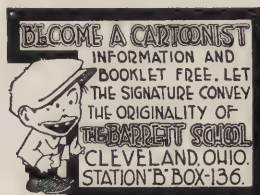
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GROWTH

EVERYTHING that lives undergoes changes, if sound and healthy, it grows, develops and becomes stronger, up to a certain point, as time goes on; without, as a rule, losing the main characteristics that mark its individuality. This is true of every *live* magazine and, though PENCIL POINTS has attained a phenomenal circulation in the two and one-half years of its life, we intend that its growth shall not slacken. To this end, the publishers mean to adhere to the policy announced at the outset, of publishing PENCIL POINTS *with* rather than *for* its readers. Consequently, we wish to tell you what we are planning for the coming months and to ask your suggestions and criticisms.

If any charter member of the PENCIL POINTS family will turn to his files of this journal, he will find that all the issues from the very first have the same essential character, but that there is, nevertheless, a great variety of material and that the placing of the emphasis on one phase or another of architectural practice or study has changed from month to month. For example, in the January issue we devoted all the space, excepting the plate pages and news section, to the subject of specification writing; while in the present issue the design side of architecture and the allied subjects of mural painting and sculpture are given the places of greater importance, the subject of specification writing not being neglected, however.

Now, during the coming months, we plan to publish just as many plate-page reproductions of masterly pencil sketches and renderings as in the past, just as much on the design side of architecture, and a number of articles by men who have distinguished themselves in architectural rendering—articles of the same general character as the "Genesis of a Rendering" by Otto R. Eggers, which appeared in the November number, and "Rendering in Charcoal" by Schell Lewis, in the August issue. A number of well-known men have already promised to prepare articles describing in detail their methods of sketching and rendering, telling just how they made some of their best drawings, which will be reproduced in connection with the descriptions.

Recognizing the value of clear reproductions of drawings by Beaux-Arts men, winners of the Grand Prix and others, such as have appeared in connection with Mr. Harbeson's serial article, we expect to make a feature of such reproductions.

Among the notable articles which have been promised us by men of the highest standing are the following: An article by Charles A. Platt, on a subject to be announced later; "The Use of Color in Architecture" by Jules Guerin; "Drawing from Life" by Frank Vincent DuMond; and "Watercolor Rendering" by Birch Burdette Long. Francis S. Swales will write on "Rendering in Wash," explaining methods by which results can be obtained with sureness and speed. Mr. Swales's experience has

especially well qualified him to write a very helpful article on this subject. Mr. Bolton Brown, who has specialized in lithography as an art, will describe the process of making lithographs. This article will be illustrated with photographs which we have had taken especially, showing the author engaged in the work he describes. The last mentioned article represents a class of subjects that we feel should not be neglected, for though such matters as lithography, etching, the making of linoleum prints (a subject which, by the way, was covered in this magazine during the past year) are not a part of the architect's and draftsman's work, many of our readers have taken up some such art for the pleasure they derive from it.

We expect to give just as much attention to architectural education as in the past, for it is a matter in which all of our readers are interested, either for their own improvement or from the standpoint of the older and more experienced man who is desirous of rendering what assistance he can in the development of the younger men in the profession.

The study of materials with a view to their best use from an æsthetic standpoint, we feel, should be continued, the necessary research work being carried on with the greatest thoroughness, the articles packed with detailed information and illustrated with photographs which clearly show the characteristics of the materials and the methods of working them.

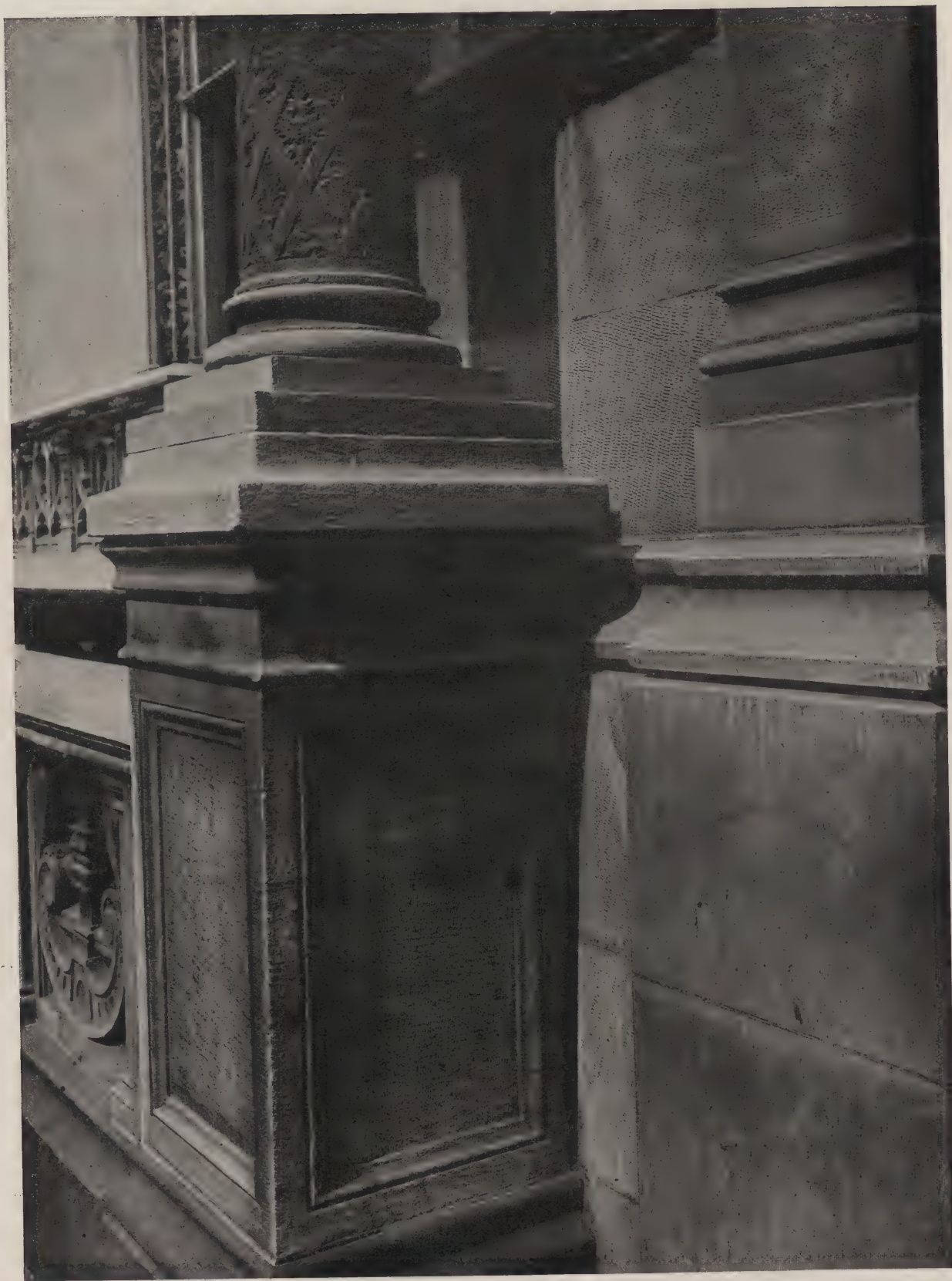
We believe that the discussion of specification writing started with the January issue should be kept up, the views of various men being presented from month to month in the department "The Specification Desk." Several excellent contributions have already been received, assuring us of the continuation of this discussion.

A kind of article to which we believe much more space should be given than we have found it possible to allot in the past is that describing the practical methods of doing drafting room work, the making of full-size details and various other parts of the work that has to be done in every architect's office and that it is highly desirable should be done in the most direct and time-saving way.

The importance of bringing the men throughout the country into closer touch with each other by means of news items concerning the activities of architectural clubs and other organizations of the kind, and the publication of news of general interest, such as the announcement of competitions and of the awards in competitions—these and all of the things that go to make up the human side of the architectural profession, we plan to give ample space to. In this part of the program, we especially need the continued co-operation of our readers.

This is the thing as we see it—now, we ask that you write us your views, criticisms and suggestions; for our policy is, as it has been from the first, to edit PENCIL POINTS *with* rather than *for* its readers.

PENCIL POINTS



*Close-up Photograph Showing Contrasts in Texture of Stonework, Vanderbilt House, Fifth Avenue.
Richard M. Hunt, Architect.*

SPECIFICATIONS AND PERSONALITY

BY JOHN VREDENBURGH VAN PELT

THIS article will undoubtedly appear so antiquatedly reactionary that it will seem radical,—like the gown of a preceding generation to which the fashion has not yet come around. Specification writing is ordinarily entrusted to specialists, many of whom have a scant knowledge of design. They will not like what I have to say. In the average office in the larger cities the architect himself finds so many demands upon his time and energies that he considers the writing of a specification quite outside the sphere of his activities. In the early days of his practice he may have slaved over such unsympathetic chores, but those days are only dimly remembered nightmares of the past. He would not willingly admit that he has forgotten this important essential of his art, still less that he was never master of it, never could write a well-classified, complete, up-to-date, practical description of the component parts of a building. He is an architect and, before the client, an architect knows all such things, only he is too busy to waste his valuable time, the time of a trained and inspired artist, on such drudgery. Therefore, he too may not like what I have to say.

There was an epoch when architects really built the great monuments of the world. Monks, some of them appeared, but all were true architects. They not only conceived and drew out their designs, but they occupied the close relation of the present-day contractor, nay, of the sub-contractor to the work.

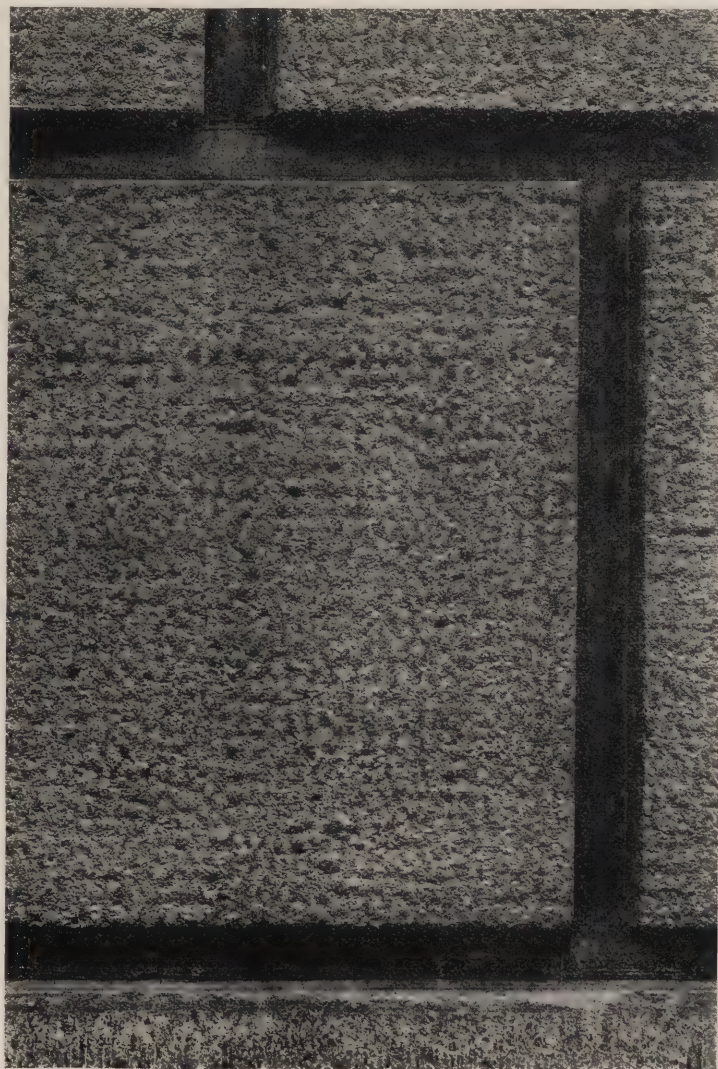
The specification as we understand it was unnecessary. The architect was "on the job."

There are men today who build as well as conceive their ideas and, from time to time, their ideals. They follow the cutting of the stone themselves and watch to see that each is set in its appointed place and manner. They do not delegate the care of the growth and development of the child to a nurse, even though that nurse may have proved reliable or have come with the best references. "But," our offended specification writers and architects will say, "the personal service method is impossible if there is more than one job in the office

at a time. Organization is the watch-word of the day." True, and it is a good watch-word. It is a fact that only men of established fame could afford to seclude themselves, turn their backs to the time-devouring channels through which work is obtained, refuse the small job that leads to the one on which they wish to concentrate and have any work left.

An *impasse*! Is there no solution? Would it be worth while if there were one? I believe there is and that it would make for better architecture.

Architectural work divides itself into two classes, the commercial and the personal. The terms are possible of misconstruction, for some of the work built for commerce still requires the personal touch and some of the work for individual clients is, after all, only routine. The Alexander Shoe Store on Fifth Avenue, New



Close-up Photograph Showing Machine Crandalled Finish on Indiana Limestone. Detail of Globe Indemnity Building, Newark, N. J.

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*Photographic View Showing Sgraffito Detail on a Portion of the Façade of the Store of Andrew Alexander, Fifth Avenue, New York City.
Carrère & Hastings, Architects.*

PENCIL POINTS



*Close-up Photograph of Terra Cotta Detail, Pershing Square Building,
New York City. York & Sawyer and John Sloan, Architects.*

PENCIL POINTS

York, page 12, Carrère & Hastings, Architects, has a *sgraffito* elevation that must have been carried out under the continued watchfulness of the designer, and we are all familiar with the client who brings in a page of a current popular magazine, says she wants a house just like the one on page 273, and not only says so, but gets it.

Really personal work, be it house or shop or monument, requires at all points the permeating touch of the man who dreamed it. No one can doubt that if Henry Bacon had been engrossed in putting up acres of speculative apartment houses and blocks of office buildings while the Lincoln Memorial was rising above its mirror lake we might have been well satisfied to do without the reflection.

If in an organization there must be a job getter, there must also be a designer. It happens too often that the job getter, who in order to give a semblance of reality to his pose of eminent artist makes the sketch or initial design, in order also to have time to continue his fundamental activity, relegates this design to a subordinate. He in turn delegates the different operations (among which is the compiling of the specification) to other subordinates, no two of whom have any really sympathetic touch or understand the undeveloped thought of what may originally have been an artistic conception. So the personal quality is lost. The germ that may have existed has vanished.

New York City has monuments, some of them buildings that occupy one or more blocks, that are sad results of this very method. It may be that in the case of some of these the architect gave the particular building his personal attention, but was so out of practice in his *metier* of builder that he did not know how to impart the personal touch or actually lacked that quality entirely.

"Here we have it!" you will say. "That is an argument for the expert. No architect can remain proficient in all the numberless, diverse departments of his business." Well and good. Truly, an expert is needed to design the steel skeleton or lay out and calculate the radiation, and an expert may well write the specification. First, though, he must be an *expert* for that particular kind of work. Not every structural engineer has the ability or appreciation of architectural beauty to devise a skeleton that will *serve*, not *master* the design. I believe there are few specification writers who have the intuitive quality that would permit them to search out, sense, and interpret the subtleties that are needed to give the completed building personality. If they had, nine times in ten they would not remain specification writers.

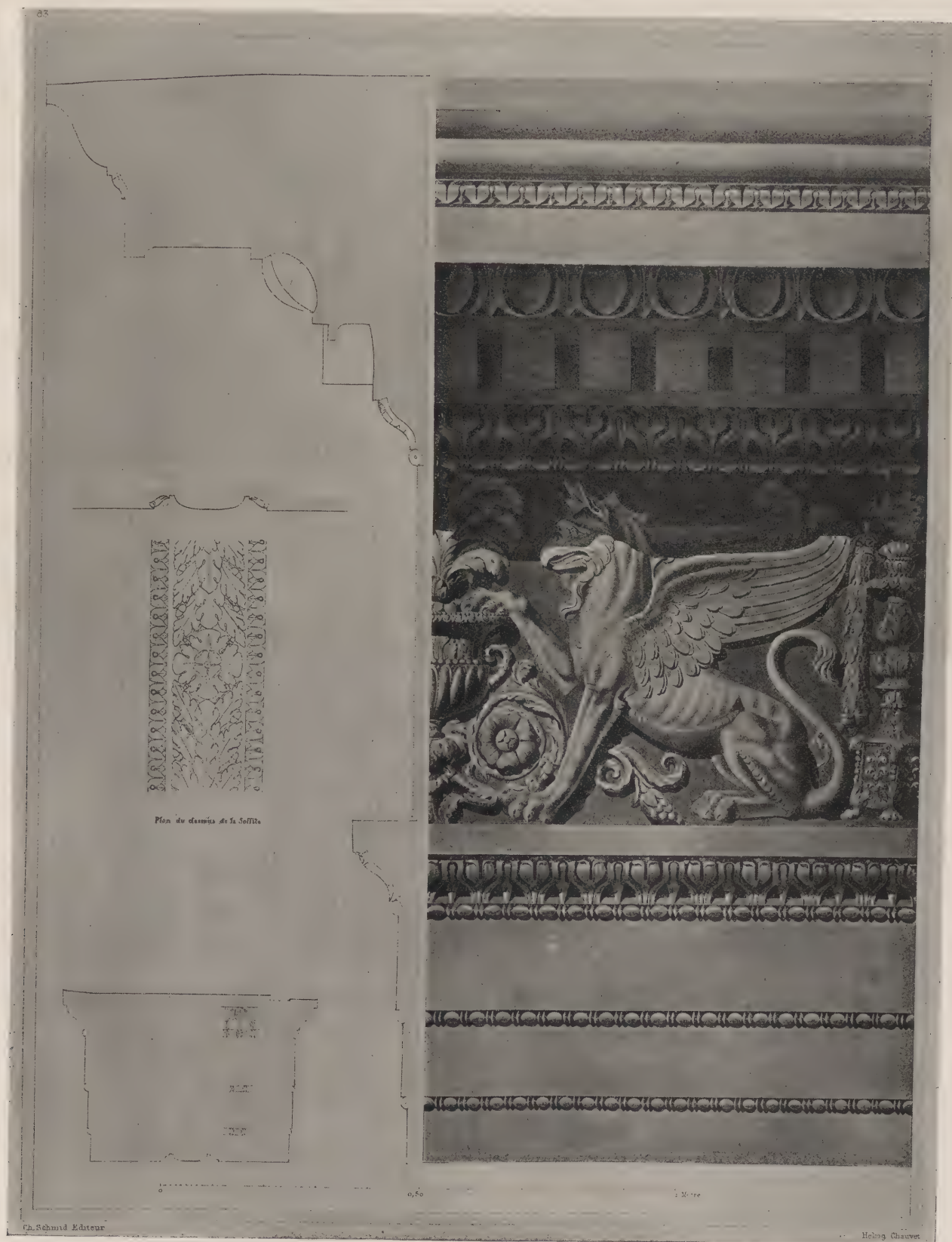
The remedy for our dilemma can come from two directions. The architect, or at least he of the organization who creates the design and carries it through (and he also, I believe, should watch the

construction), must read and revise the specification if he does not actually write the first draft. And the specification writer must become more of a designer and must ponder and assimilate the original thought as well as give a glance to the working drawings. A singer will tell you that there are many who can play brilliantly, but few who can acceptably accompany a simple lullaby.

Best, though is the architect who is willing to concentrate all his energies on the work he undertakes and who, into all its parts, infuses himself. Although Richard M. Hunt had many draftsmen and students in his office, he could only have obtained the beautiful contrasts of texture in the house of William K. Vanderbilt, Sr., (see page 10) by the most careful personal attention to the work in its minutest detail. The close-up on page 11 is a machine-crandalled finish of the Globe Indemnity Building of Newark, N. J., by Frank Goodwillie and Wesley S. Bessell. It was through the personal work of Mr. Bessell in the stone cutter's yard that this very soft and beautiful finish was developed.* The terra cotta motive on page 13, taken from the Pershing Square Building, New York City (York & Sawyer and John Sloan, Architects), is another evidence of the designer's close scrutiny of the execution of his work. This terra cotta has a base tone of gray, rough texture and is fire-flashed in golden brown. Dark polychrome colors are used in the backgrounds to accentuate natural shadow. The terra cotta harmonizes in color and texture with the wire cut brick, and for scale harmony the terra cotta is jointed in small pieces. It may be that this was not expressed in the written specification, rather in a later verbal one between designer and shop foreman during manufacture. The point is that the original design and its execution cannot be severed.

After all, what is the use of doing mediocre work? A little more money? A man can only use so much in his life time and his children would be better citizens if they had to earn theirs. The small town architect has greater opportunity for contentment than the man with a numerous drafting force. The former is at least in close touch with his work. He has the opportunity, whether he embraces it or not, to make each building as nearly perfect as within him lies. If he does that he will find consolation for the mistakes when he looks back over his career. Each building that records such an effort will be a memorial to its author, a monument to him as long as it remains for it will record the vivifying touch of a personality.

*Note—The available appropriation for this building did not warrant a hand-crandalled finish. The finish devised and here shown is obtained by placing the block beneath a pneumatic tool having a series of points. This is expeditiously guided by hand and moved across the face of the stone.



DETAIL FROM THE FORUM OF TRAJAN, ROME
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE".

An effective sketch by John R. Rowe, a student at the Ecole des Beaux Arts, Paris, is shown on the other side of this sheet. Mr. Rowe was in this country recently on a visit and while he was here PENCIL POINTS borrowed of his sketches for reproduction. Mr. Rowe sailed about a month ago to continue his work in the Ateleir Laloux. His sketches have been shown in a number of exhibitions in this country.

PENCIL POINTS

VOL. IV, No. 2

PLATE VI



PENCIL SKETCH BY H. VAN BUREN MAGONIGLE

On the other side of this sheet is reproduced a pencil sketch of architectural detail that is interesting both as a presentation of a fine design and as an example of the way in which architectural detail should be sketched by the architect or student who wishes to develop himself through study of fine works and to preserve a record for possible future reference in his work. This is one of Mr. Magonigle's early sketches, having been made when he was abroad as holder of the Rotch Travelling scholarship.



SKETCH BY JOHN R. ROWE

The detail from the Forum of Trajan reproduced on the other side of this sheet shows a spirited rendering of a mythical animal motive that will repay study for the vigor of drawing it shows. The remains of the Forum of Trajan represent some of the most interesting developments of Roman architecture.

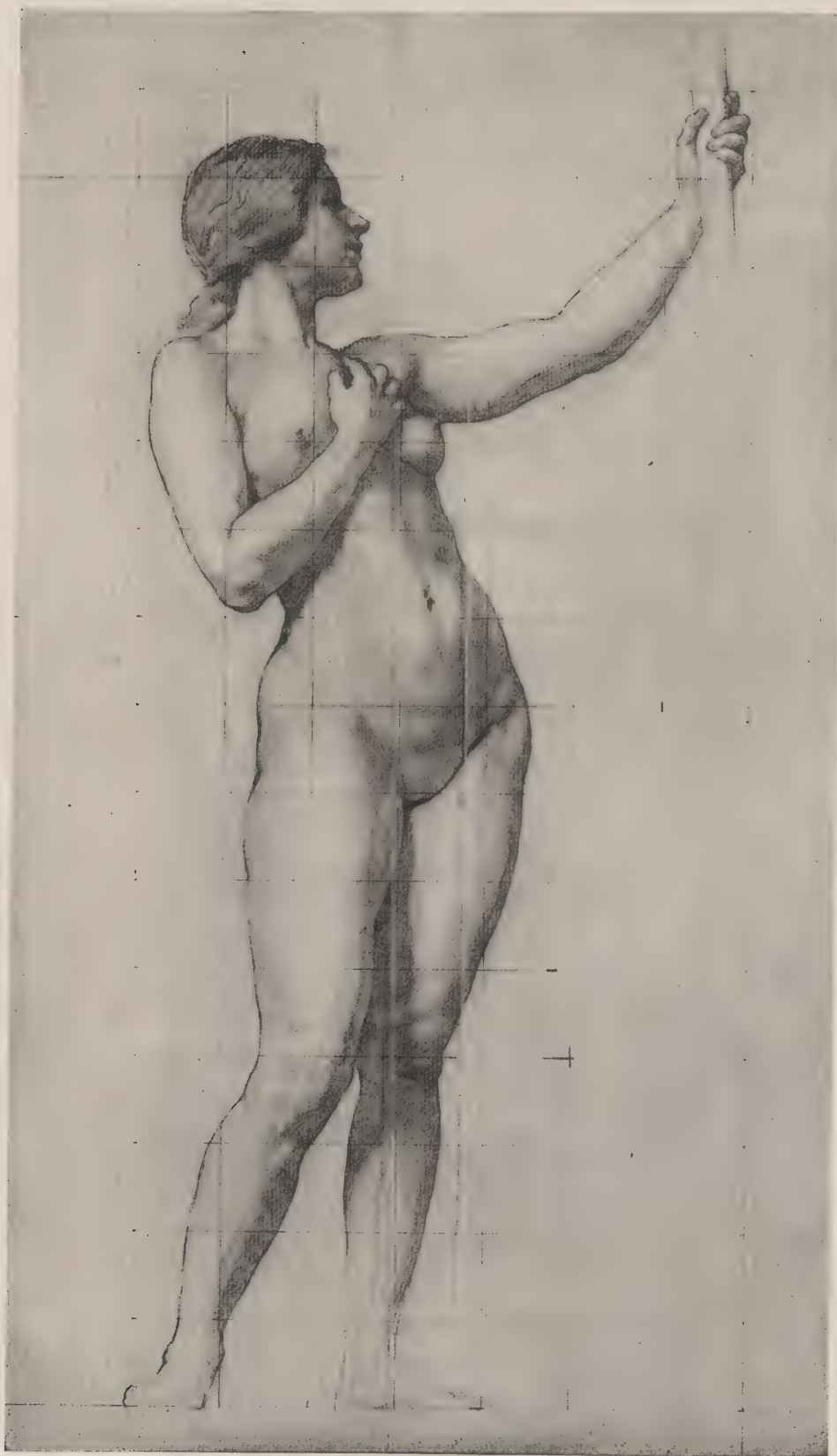


FIGURE STUDY BY KENYON COX

A remarkably fine figure study in pencil is shown on the other side of this sheet. It is one of the best of the studies by that master of life drawing, the late Kenyon Cox, and is one of several drawings loaned to this magazine by Mrs. Cox.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE
OF DESIGN

THE ARCHAEOLOGY PROJET. PART I.

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive, and the Class B Plan Problem in more recent issues.—Ed.

MANY men take an "archæo" simply because a credit in archæology is required to get the certificate of the Beaux Arts Institute, and yet if we look over the published work, the premiated work, we find some names that appear again and again under an "archæo," and the oftener we find the name, the more likelihood that the work gives evidence of ability and cleverness. These men have found that there is a great fascination in the archæology problems, an appeal quite different from that of the projet, different even from the "decorative problem," for here there is little thought of *parti* or scheme, even the ordinary laws of design—symmetry, balance, arrangement of voids to solids, etc.—take a secondary place and there is great freedom for fancy, for picturesque effect; for imagination, in fact, unhampered by practical requirements. The *parti* is usually fixed by the program. At any rate, in an archæo a *parti* must not be originated; it, too, like the ornament and details, must be taken from documents of the style in question.

There are several good reasons for doing archæology problems. In the first place, if a man is working in an atelier at nights only, and in an office by day, taking an archæo gives him a chance

for a let-up from the hard grind of the regular projet, for the time given for the archæo is about twice as long as that given for the projet, and while all of this time can be used to advantage in studying the archæology, it is quite possible to do a very good

archæo by using only a portion of it. It is thus possible to take one of these problems when one has not enough time to study properly a big plan problem.

Then, too, with this greater time and also because the archæo problem is not concerned with the finding or studying of a *parti* or scheme, there is always a very much greater proportion of time that can be used for the presentation than is the case with the plan projets. So these problems always offer the opportunity to try different kinds of rendering and to increase one's ability at rendering. Mediums may be used that would be frowned upon for a plan projet, opaque colors, lithograph effects; and drawing in perspective, which is seldom allowed for a plan projet, is here desired. The composition of the sheet is again of great importance, as usually details of the style are called for. When this is the case, if the small scale drawing is shown in elevation, as in Figure 1, a Spanish loggia, the problem of composition is very much what it was in



Figure 2. Archæology Projet, "A Normandy Shop Front," Clayton Evans Jenkins.



Figure 5: *Archæology Projet, "Entrance to an Assyrian Palace," Paul Donville.*

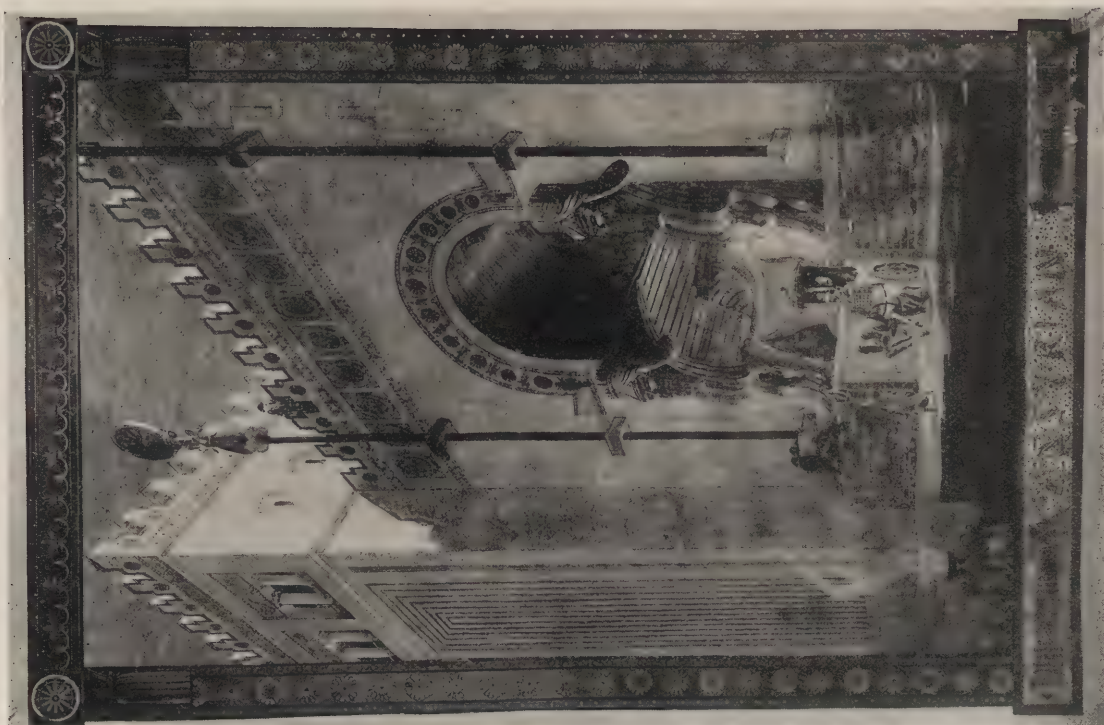


Figure 6: *Archæology Projet, "Entrance to An Assyrian Palace," J. D. Epps.*

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Figure 1. *Archæology Projet, "A Spanish Renaissance Loggia,"*
John F. Harbeson.

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Figure 4. Archæology Projeet, "A Studio in the Russian Style,"
Boris Riaboff.

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Figure 3. *Archæology Projet, "A House of the Fourteenth Century in France,"* John F. Harbeson.

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the analytique only the forms are more free and one begins to see that much of the "composing" may be done in the rendering: i.e., that washes and tones can be used to arrange a drawing. More often in an archæology, however, the small scale drawing is in perspective as in the "Normandy Shop Front," Figure 2. In this case the selection of the point of view plays an important part in the composition, as does the location of the source of light, with the resulting shadows, and the arrangement of architectural forms, gables, chimneys, dormers, etc., and accessories, people and animals, signs, etc. When no details are required, the entire problem of composition is in the handling of this small scale drawing, selection of point of view, arrangement of light and shade, disposition of architectural features and accessories. Figure 3 is an example of this type of problem. When a student attempts this sort of thing he begins to realize the value of the training in composition in the "analytique." After an attempt of this character, he will find a book on com-

position, such as Van Pelt's, much more intelligible than before. I refer to the chapters on painter's composition—composition in two dimensions—and not to those referring to the composition of architectural forms, which is a study in three dimensions, always intelligible to the architectural student.

But the best reason for taking the archæology problems, the reason why one is required to take at least one of them, is that they are an incentive to the real study of "documents," of books and drawings. In the plan projets documents are used to furnish ideas here and there for a *parti* or scheme; even while they are being consulted one's thoughts are preoccupied with the *parti* and the documents are of secondary importance. In the archæo documents are studied for their own sake. The archæo is, before all, a study in style and the *parti* or scheme, so fundamental in plan projet, plays no part here except as it may figure as a question of style—of the style called for in the program; the *parti* itself should be studied from documents.



Figure 7. Archæology Projet, "A Cast Iron Balcony," L. C. Licht.

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The problem is primarily a study in the arrangement of motives and in the ornament of the style given. It familiarizes one with many documents he would not otherwise look at, certainly not examine carefully. It gives one many new and interesting dispositions of architectural forms and enlarges one's knowledge of different details. It is one of the surest methods of creating an architectural vocabulary. It is on the discerning use of documents that success in the *archæology projet* depends. The problem may be a "Pompeian Court," to choose one at random, but the documents must furnish not only the architectural details of the court but all the accessories that go to make up the composition and, especially, an insight into the life of the people of the period, for an intelligent study in *archæology* cannot be made without some understanding of the manners and customs of the time.

It is here that the student in the city has a great advantage over one in a small town. In New York, for instance, as well as Boston and Philadelphia, there are several architectural libraries of the first rank accessible to all and most of the larger architectural offices have libraries of a great number of well selected books, although in exceptional cases, such as "A Tribune in a Turkish Mosque," or a "Studio in the Russian Style," Figure 4, most of them would be found wanting, as such documents have no direct bearing on modern practice. Such problems are, of course, all the more interesting as they take one into unknown lands. But even in a small town the student can find documents, if he will look, perhaps in books of travel, or in files of the "Geographic Magazine" or in the circulars of travel agencies.

With ingenuity much can be done with scanty documents. Figures 5 and 6 show two different ideas of an "Entrance to an Assyrian Palace," both giving a convincing idea of reality and satisfying one as to being in "style." If we examine them closely, however, we find that almost every motif used in one may be found in the other, though used in a different way—the cheek blocks of the steep stairs in the first appear in the foreground of the second; the tower treatment is the same in each except for the top, the loggia in the top of the second shows at the back between the two towers of the first; the Assyrian "winged men" at the large entrance are the same in each; the animals in relief flanking the entrance in the second are shown at the bottom of the frame in the first, and so on. It is seen what can be done with a few documents understandingly used. In fact, these two men worked side by side and had between them only three pages in a history of architecture, part of which was text.

In some cases the program itself imposes a simplicity, as in the "cast-iron balcony" of Figure 7; here a great number of motives would have conflicted with the requirements of the style. However, as we shall see later, the presentation itself may be a study of *archæology*.

THE PARIS PRIZE.

COMPETITION for the Sixteenth Paris Prize of The Society of Beaux-Arts Architects is now in progress, the First Preliminary Competition having been held Jan. 6. The Second Preliminary Competition will be held Feb. 24, and The Final Competition will open on May 5. The judgment in the Final Competition will take place July 17, and the drawings will be on exhibition July 17 to 28 inclusive.

These competitions are organized for the purpose of choosing a scholar to pursue his studies in the First Class of the *Ecole des Beaux Arts*, Paris. The winner will receive three hundred dollars quarterly for two years and a half, dating from his arrival in Europe. The competitions are open to all citizens of the United States under twenty-seven.

In regard to the winners of the twelfth, thirteenth and fourteenth Paris Prizes, the Committee on the Paris Prize of the Society of Beaux-Arts Architects reports as follows:

The Twelfth Prize Scholar, E. E. Weihe, has completed his required work and expects to return in February and probably go to California. He has taken most of the programs at the *Ecole* and done especially well. This Spring he took a trip through Normandy and Brittany and shorter trips to the towns near Paris, Fontainebleau, Compiègne, etc. During the Summer he worked on Mr. Bigot's drawings for the new wing of the Sorbonne and took a short trip to Spain.

The Thirteenth Scholar, Duncan McLachlan, Jr., has been steadily working in Laloux's Atelier, has already received more values than required, also received a mention on the Godebeuf which is rare for a foreigner to get. During the Spring he visited the towns near Paris; in Summer he has been studying Romanesque and Gothic work in the South of France from Clermont-Ferrand to the coast and Roman buildings at Nîmes and Arles. He also did some excavating for Roman ruins in the Haute-Loire. In December he was sent by the Committee to Nice where Lloyd Morgan was ill in hospital.

The Fourteenth Scholar, Lloyd Morgan, arrived in Paris in January, entered Laloux's Atelier and shortly after arrival won a first second medal on the Rougevin competition. He took a number of the *esquisse-esquisses*, niggered on the Achille Leclerc, and then started niggering seriously on Pechin's drawings for the Grand Prix. In the Summer he went to the South for a sketching trip, but was unfortunately taken ill near Nice. It was a very serious case of congestion of the lungs with asthma, aggravated by the fact that he had been gassed during the war. He was taken to a clinic at Nice where he is now convalescent and writes that he expects to return to Paris in January. The Committee was enabled to get him the best doctors and hospital treatment through the generosity of one of the members of the Society.

The Fifteenth Scholar, Roger Bailey, has only just arrived in Paris, and is getting settled. He is living at the Hotel de Tours, Rue Jacob.



Figure Study in Pencil by Kenyon Cox. Decoration in The Hotel Manhattan, New York City. See Text on Page 31.

THE EVOLUTION OF A KENYON COX MURAL

UNUSUAL interest attaches to the illustrations showing the various steps in the development of a mural decoration by the late Kenyon Cox, which we are privileged to present here through the courtesy of Mrs. Cox.

In the lower portion of this page is seen a reproduction at reduced size of a blue print of the elevator enclosure of the Hotel Manhattan. In the space his decoration was to occupy, Mr. Cox pasted a piece of white paper and on this he made his first rough study for the design of the decoration. This may be seen clearly in our illustration which shows how effectively a few pencil strokes made with the greatest freedom can express a design. It is interesting to note, by comparing this first rough study with the miniature reproduction of the finished panel shown above it, how little it was found necessary to change the original conception in the later study of the design. This is characteristic of the work of the masterly designer, the clearness of vision and the sureness that enable him to present in his first rough sketch a design that can be carried to completion without great changes. It will be noted that the only material difference between the first study and the finished decoration is in the position of the arms of the figures in relation to the central cartouche. In the sketch, as may be seen, each figure rests a hand on the top of the cartouche. This gives a feeling that the figures are partly supporting their weight in this manner. A distinct improvement in the feeling of the design has been made during the further study by means of merely placing the hands under the cartouche in such a way that instead of receiving an impression of figures clutching for support, one feels that the figures quite naturally remain in equilibrium and are able

to lightly support the cartouche between them—this effect is pleasant. Though these figures are not by any means ethereal, as may be seen by reference to the figure study on page 30, the lines of the pose, assisted by the skilfully disposed floating draperies, give a completely satisfying sense of lightness to the figures. This can be appreciated by reference to the small photograph of the finished panel shown on this page.

The life study and the drapery study for the right hand figure are reproduced on pages 30 and 32 respectively. Quite aside from their interest as illustrations of the successive steps in the development of a work by a master artist, they are of the greatest value as examples of exquisite draftsmanship, of sound technique, as evidences of the conscientiousness and thoroughness with which Kenyon Cox worked. No better examples, we believe, can be found for the student of life drawing to examine thoughtfully than the study on page 30 and the other life drawing by Kenyon Cox which is reproduced on Plate VIII of this issue.

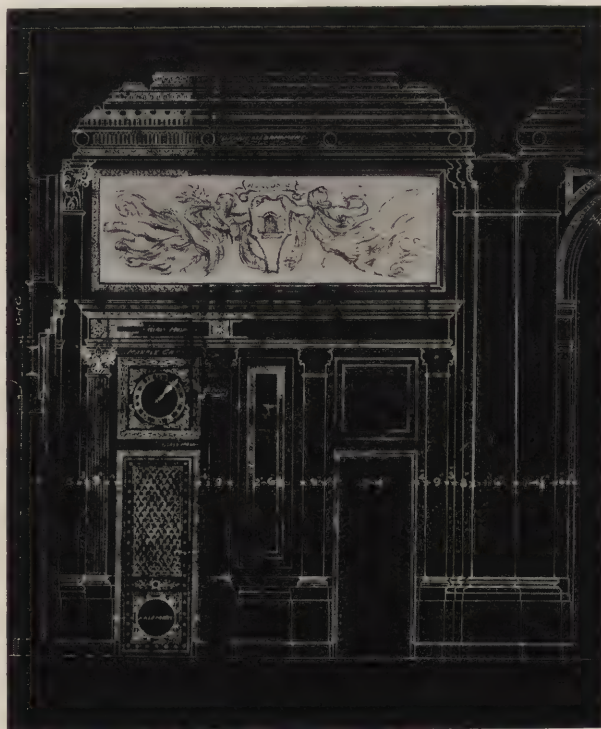
In these drawings it is a pleasure to note the combined precision and freedom, the sureness and expressiveness of the pencil strokes. These drawings are not "tight," though they render the subjects with painstaking thoroughness. They are full of character and tenderness and at the same time show a constant perception on the part of the artist of the purpose for which they were being made, that of serving as studies for mural decorations. This is evidenced in the grace of line, and the formality, without stiffness, of the poses.

Note—The Hotel Manhattan, for many years one of New York's finest hotels, stood on the northwest corner of 42nd Street and Madison Avenue. It was remodelled and turned into an office building and bank a few years ago.



Copyright by Kenyon Cox, 1901.

Decoration by Kenyon Cox in Hotel Manhattan, New York City.



First Pencil Study by Kenyon Cox for Decoration Shown Above. Made on Writing Paper Pasted to Blue Print. H. J. Hardenbergh, Architect.



Drapery Study in Pencil by Kenyon Cox, for Figure Shown on Page 30. See Text on Page 31.

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SPECIAL NOTICE.

THE publication of Mr. Philip G. Knobloch's book "Good Practice in Construction" has, because of unavoidable manufacturing difficulties, been delayed. Copies are now promised to us on or about February 15th, at which time all orders on hand will immediately be filled. We desire to express to all those who have ordered this book, our regret that they have been obliged to wait for their copies.

AWARDS IN SLATE SLOGAN AND INSIGNIA COMPETITIONS.

PRIZES have been awarded in the competitions held by the National Slate Association for a slogan and insignia. William J. Reed, an advertising man of Aurora, Ill., is the winner of the one hundred dollar prize for a slate slogan. Mr. Reed's slogan, "Slate—Consider Its Uses," was selected by the judges as the best among one thousand seven hundred slogans submitted. This slogan was adopted for two chief reasons; first, it places a certain responsibility for thought and action upon the reader, thus stimulating his interest and imagination; second, the National Slate Association believes that while slate is widely known and recognized as a product of high merit for certain uses, this particular slogan will stimulate the general interest to a fuller consciousness of the possible extent and diversity of its uses.

The one hundred dollar prize for the Association's insignia was awarded to Emery J. LaLiberte, an architectural draftsman of Brockton, Mass.

The Association held a most successful convention recently, at which many matters of a constructive nature were taken up.

The primary purpose of the Association is to establish a definite source and responsibility for slate information through a recognized organization and to stimulate the sale of slate products by bringing its properties and uses to the public consciousness.

Headquarters were opened last summer in the Drexel Building, Philadelphia, under Warner S. Hays, Secretary of the Association. Results were immediate and of such value to the industry that the membership, now representing about 80% of all slate production in the United States, came to the first annual convention full of enthusiasm and eager to broaden its field of activity.

The officers of the National Slate Association are: President, W. H. Keenan, Bangor, Pa.; Vice-President, G. F. Bernard, Boston, Mass.; Treasurer, A. H. Morrow, West Pawlet, Vt., and Secretary, W. S. Hays, Philadelphia.

Three new directors were added to represent districts formerly unrepresented in the Association. These—C. A. Lowry, of Auld & Conger Co., Cleveland, Ohio; C. H. Davis, Davis Slate and Manufacturing Co., Chicago, Ill.; P. C. Stanwood, Blue Ridge Slate Co., Esmont, Va.

ALPHA ALPHA GAMMA.

A NATIONAL honorary fraternity of women architectural students has been formed under the name of Alpha Alpha Gamma. In 1915, an organization composed of women students in Architecture was formed at Washington University, St. Louis, Missouri. This organization was the foundation of the new fraternity.

Alpha Alpha Gamma was made a national fraternity in 1921, with Alpha Chapter at Washington University. The present chapter roll is: Alpha Chapter, Washington University, St. Louis, Missouri; Beta Chapter, University of Minnesota, Minneapolis; Gamma Chapter, University of Texas, Austin; and Delta Chapter, University of California, Berkeley.

TOURIST HOTEL ARCHITECTURE.

A MOST interesting article on "Securing a Distinctive Atmosphere in Tourist Hotel Architecture," by Roy Carruthers, managing director of the Waldorf-Astoria, appeared in the December number of *Hotel Management*, published at 342 Madison Avenue, New York City. The article is illustrated with views of the New Imperial Hotel in Japan, of which Mr. Frank Lloyd Wright was the architect, and of the Fujiya Hotel, named after Japan's marvelously beautiful mountain, Fuji Yama. The text and illustrations contain many valuable suggestions.

Below is shown at reduced size the cover design of the program for the recent "Architects' Frolic" at which the San Antonio Architectural Club entertained the Texas Chapter of the American Institute of Architects.



PENCIL POINTS

ARCHITECTURAL POLYCHROMY

A VALUABLE paper on "Architectural Polychromy" which was presented by C. Howard Walker, whose words are always authoritative on matters of architectural design, before a joint meeting of the Illinois Chapter of the A. I. A., the Illinois Society of Architects, and the Chicago Architectural Club, has been printed and copies can be had by readers of this journal who address a request to The Associated Tile Manufacturers, Beaver Falls, Pa. This paper was read on the occasion of the opening of an exhibition of tiles and tile work. Only a very imperfect idea of its scope and usefulness can be given here, the full text of the paper should be secured and read.

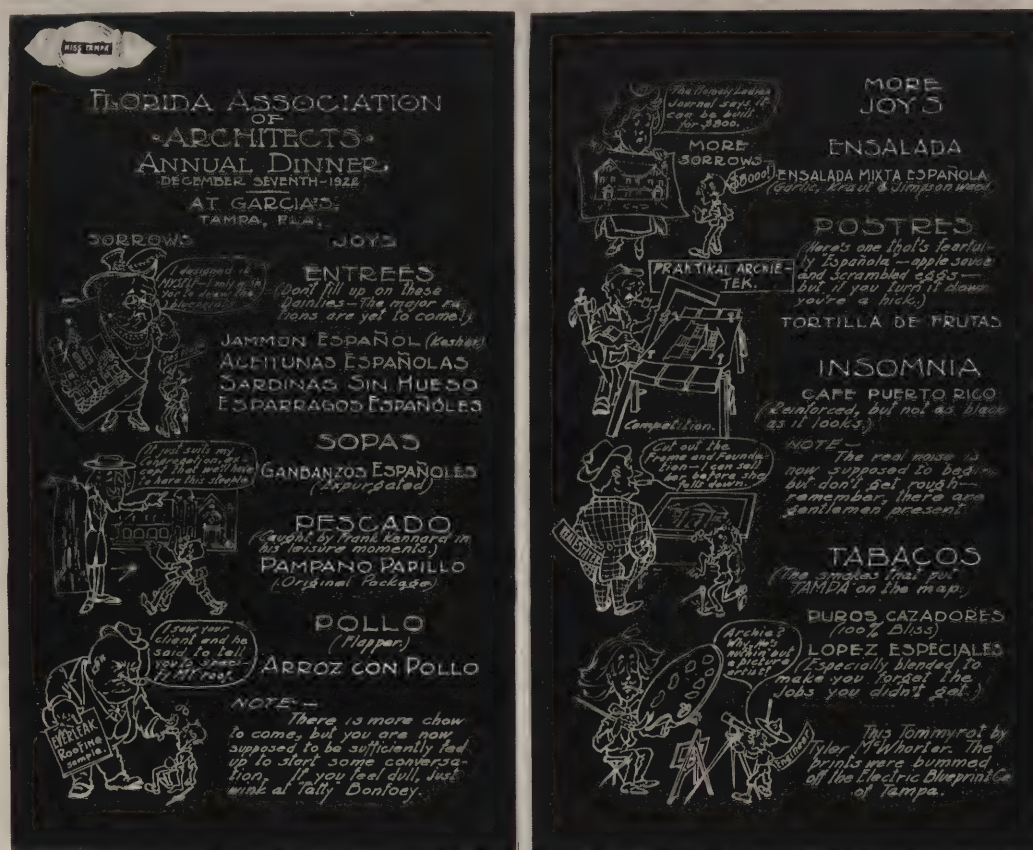
In a clear and very interesting way Mr. Walker discusses the proper use of polychromy in architecture, pointing out that unless there is a marked domination of one color a tendency to confusion is produced and the fact that a building is an entity denied. He advises that the introduction of polychromy, i.e., many colors, should be minor and accessory and devoted to intimate details which should accent, but not disturb, the general effect.

He traces briefly and in a very readable manner the development of the use of polychromy in architecture, from the earliest times, pointing out the improbability that the Greek temples of the Fifth Century were as crudely colored as they are shown in Hittorff's restorations, which have been considered authoritative. He pays a tribute to Mr. Leon Solon's knowledge and appreciation of the polychromy of the Greeks.

He speaks of the wall decorations of Pompeii, and of the geometric work of the Mohammedans, of mediæval work, and of early Italian colored terra cotta, as well

as of the earlier polychromy of Egypt, Assyria, and China, giving illuminating suggestions. For instance, he points out that in the attempts to restore the Mohammedan decorations in Spain, after the removal of the coats of whitewash under which they had been hidden, the same thing happened that occurred with the restoration of Greek polychromy, i.e., if an indication of a color appeared, it was spread over the entire surface of the unit upon which it existed and the color carried down on the edges or reveals until it met the color of the next plane. He states that in examining the work of the Moors he failed to find any color on the reveals. The white reveals were like an exquisite pattern of lace drawn over the colored patterns. The white edges defined each color area. He emphasized the importance of decisions of line and clear definition of areas of color as exemplified in tiles where little raised dikes are formed to hold and retain the glazes, which when fired upon plain surfaces would otherwise run into each other.

One of the most interesting parts of his paper deals with color harmony. He points out that in the past there was no apparent theory of color combinations, the principal desire seems to have been to have the colors clear and intense, unconfused with adjacent colors, and therefore separated from them. Few neutralized colors occur and the naturalistic color often affects the choice of color. Mr. Walker points out that complementary colors are conflicting, and conflict in color combinations is undesirable, except when violent sensation is desired, also that a strong tendency to harmony is produced if one color and its immediate changes into the adjacent colors in the spectrum is made the dominant of the color scheme. That any third of the circular spectrum is safe and contrasts may be obtained by introducing small areas of colors in the other two-thirds of the spectrum.



Above is Shown at Reduced Size the Menu of the Florida Association of Architects' Annual Dinner.

PENCIL POINTS

PERSONALS.

WHITNEY WARREN has consented to serve temporarily as director of the work of the Beaux-Arts Institute of Design in the place made vacant by the death of his brother, Lloyd Warren.

JOSEPH WESTON has opened an office for the practice of architecture, at 515 Hollywood Security Building, Hollywood, Cal.

EDWIN W. BYERS of Flint, Mich., VINCENT J. WAIER of Detroit, Mich., and JAMES C. HARRIS of Saginaw, Mich., have formed a partnership for the practice of architecture and engineering under the firm name of Byers & Waier Architects and Engineers, with offices in the Flint Coal Company Building, Rooms 1 and 2, Flint, Mich., and at 124 North Washington Avenue, Saginaw, Mich.

CLAUSEN & KRUSE, Architects, have removed their office to 910 Kahl Building, Davenport, Iowa.

JOS. VAN G. HOFFECKER has opened an office at 803 Eighth Street, Ocean City, N. J., for the general practice of architecture.

M. NIRDLINGER and R. M. MARLIER have formed a partnership under the name of Nirdlinger & Marlier, Empire Building, Pittsburgh, Pa., for the practice of architecture. FRANZ & BOND, Architects and Engineers, 189 High Street, Holyoke, Mass., have dissolved partnership due to the appointment of Philip E. Bond as city engineer. Fred H. Franz is carrying on the business at the same address.

A. C. ZIMMERMAN has opened an office for the practice of architecture and engineering at 417 San Fernando Building, Los Angeles, Cal.

DERRY & ROBINSON, Architects, have opened a new office at 3 Joy Street, Boston, Mass.

DAVID T. ELLIS from Cardiff, Wales, has joined the staff of Bertram Grosvenour Goodhue.

HAROLD S. KAPLAN, Architect, formerly with Stevens & Lee, is now practicing architecture at 298 Dundas Street, West Toronto, Ont., in association with A. Sprachman, under the firm name of Harold S. Kaplan & A. Sprachman, Architects.

WILLIAM W. DAWSON, JR., Architect, has removed his office from 127 Washington Street to 46 South Main Street, South Norwalk, Conn.

R. M. GUNZEL has been placed in charge of the new branch office of the Warren Webster Company in Los Angeles, Calif.

FRANK R. PECK, of 308 East 4th Street, Los Angeles, Calif., has been appointed to represent Gillis & Geoghegan for the sale of G&G Telescopic Hoists in California. Together with S. W. R. Dally, of 332 Pioneer Building, Seattle, they will handle all of the Pacific coast business of the firm.

SAN ANTONIO ARCHITECTURAL CLUB.

IN fifteen months the San Antonio Architectural Club has grown from fifteen charter members to about one hundred members. During the past year much good work has been done and seed has been sown that will, we are sure, make 1923 a fruitful year. Among the most important pieces of work accomplished by the club has been the overcoming of a spirit of jealousy and mutual disrespect that was all too prevalent in San Antonio, as it is felt to be in other cities of states where no license is required for the practice of architecture. The bringing about of a better spirit has been largely due to the efforts of the club.

The club successfully arranged and presented an entertainment for the Texas State Chapter of the American Institute of Architects during the recent convention of that organization. Features were a dinner, impromptu table talks, reading of verses by E. B. Hays, president of the Club, and a minstrel performance.



JOHN RICHARD ROWE.

JOHN RICHARD ROWE, one of whose sketches is reproduced on a plate page in this issue, is an architectural student at the Ecole des Beaux Arts, Paris, who was recently in this country on a visit, and has returned to continue his studies.

The sketch reproduced here was exhibited in the Autumn Salon, 1922, in Paris. Mr. Rowe's work has been shown in this country in an exhibition at the Toledo Art Gallery, and in the Albright Gallery, Buffalo, where a room was devoted to his drawings.

Mr. Rowe was born in Buffalo, N. Y. After graduating from high school, he worked in the office of Green & Wickes, architects, Buffalo, for two years. He then entered the Massachusetts Institute of Technology as a special student. After finishing his studies at M. I. T., he returned to the office of Green & Wickes for a year. He then went to Paris and entered the Atelier Gromort. He is now a student in the Atelier Laloux.

PORTO RICO ARCHITECTURAL CLUB.

A SOCIETY under the name of "Porto Rico Architectural Club" has been organized by the students in the course of Architecture established in the College of Agriculture and Mechanic Arts of the University of Porto Rico, Mayaguez, P. R.

The Board of Directors were elected as follows: Ernesto Pérez, President; Hernando Hernández, Vice-President; Domingo Caino, Secretary; Luis Alvarez Stéfani, Treasurer; José Serrano Anglada, Voter.

Norris I. Crandall, Director of the Department of Architecture, was unanimously elected Honorary President. The Secretary's address is as follows: P. O. Box 235, Mayaguez, P. R.

The purpose of the organization is to promote the development, study and practice of Architecture in the island of Porto Rico.

PENCIL POINTS

SETTING UP A DESIGN AT FULL SIZE IN PAPER.

AN INGENUOUS method of setting up a design at full size in such a way as to judge its effect in execution at a comparatively small expense is shown by the photograph on page 37. It will be noted that the monument has the appearance of a marble or plaster statue on a pedestal of enduring material while the effect of the curved exedra can be well judged, still there is nothing more substantial there than paper, wall-board and two wooden seat-ends. The figure is a "solar print" photographic enlargement of the model shown on this page. The enlargement was made in sections which were pasted on wall board very much after the fashion of a poster on a bill board. The material was then sawed out to the silhouette and this piece of scenery set up on a pedestal made largely of paper. The bench, excepting the seat ends already mentioned was also made from paper. The idea was worked out by the architect John Mead Howells and the sculptor C. P. Jennewein associated as designers of the monument.

FONTAINEBLEAU SCHOOL OF THE FINE ARTS.

A SUMMER School for American architects, painters and sculptors is to be opened in the Palace of Fontainebleau, France, under the patronage of the French Government.

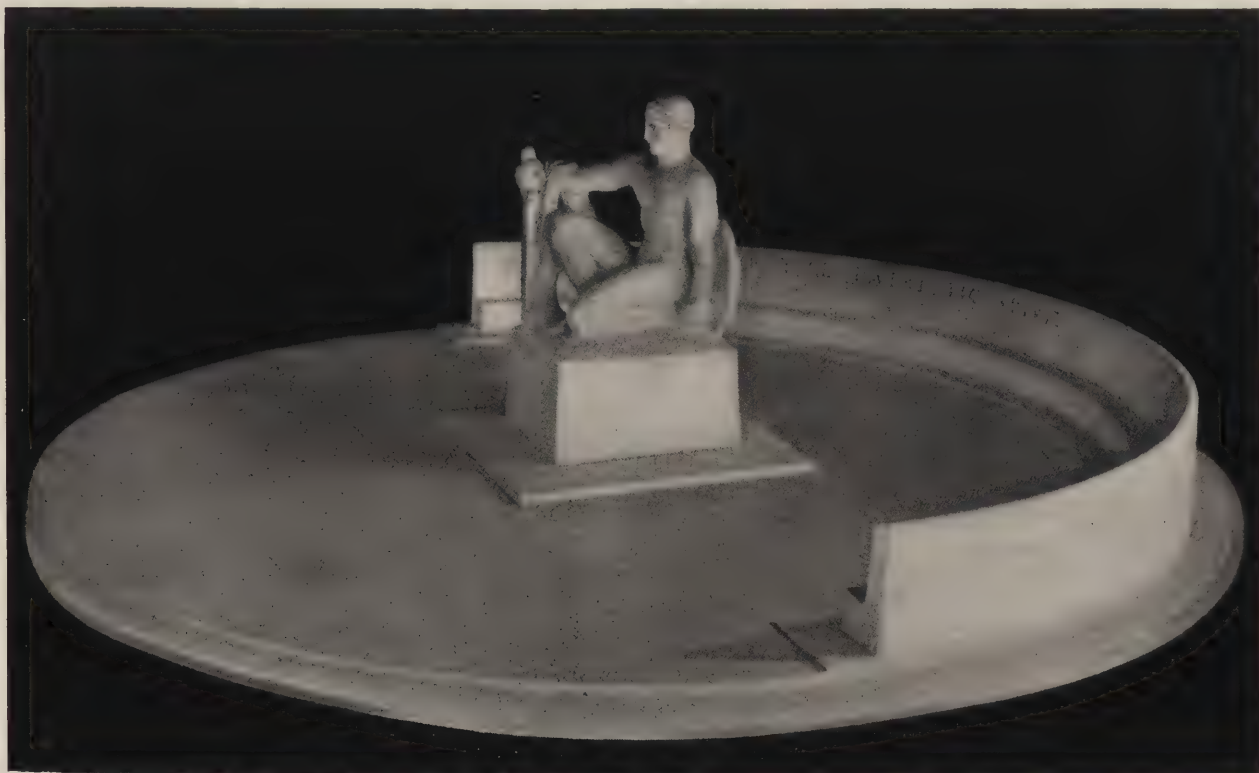
Arrangements were completed last summer by Mr. Lloyd Warren, and since his death the carrying on of his work has been assumed by his brother, Mr. Whitney Warren, the work of the American organization having been placed in his hands for the Department of Architecture. The results of this work are certain to be far-reaching since there is no place in France better adapted than Fontainebleau for the study of all styles of architecture, painting and interior decoration for at one time or another many of the great French and Italian masters

have left their imprint upon this group of buildings. It is also an excellent point of departure for excursions to study the notable works of architecture in the neighborhood of Paris.

The details of the plan are given in the following quotations from the circular issued by the American organization:

"In addition to the Music School for Americans which has functioned now for two years with great success in one wing of the Palace of Fontainebleau, there is to be opened this year, from June 25 to September 25, a School of Fine Arts devoted to the study of Architecture and Painting. These schools were conceived by M. Maurice Fragnaud, *Sous-Prefet* or Governor of Fontainebleau, and are under the direct patronage of the French Government through its Minister of Fine Arts. They are located in the Palace itself and the Professors are chosen from among the most distinguished French artists and architects, the School of Fine Arts being under the eminent directorship of M. Laloux, Member of the Institute, and one of the best-known patrons of the *Ecole des Beaux Arts* in Paris.

"The Fontainebleau School of Fine Arts does not duplicate any course of study that now exists in France or America. It is a summer school only and is designed as a sort of post-graduate school for advanced students who, under an intensive system of instruction, can benefit by their unique surroundings. The studios and drafting rooms are in the Palace itself, a palace completely furnished and justly considered one of the very finest in Europe, in which the pupils may study at their leisure the various styles and decorative features that have served as the inspiration of artists for centuries. We now possess in America every opportunity for technical training in the Fine Arts, but this school aims to supplement this and widen the artistic horizon of its students by travel and by contact with the artistic and historic tradition of an older civilization.



Courtesy of The Monument and Cemetery Review

*Photograph of Model of the Barre Monument, C. P. Jennewein, Sculptor, John Mead Howells, Architect.
See Text on This Page.*

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Photograph Showing Full Size Paper Set-up of the Barre Monument. See Text on Page 36.

"For Painters and Sculptors: Atelier work in the Palace Studio, specializing in the study of the arts of Mural Decoration and the study of Ornament. Work in Tempera and Fresco. Frequent trips to Paris and elsewhere, by motorbus, to study the work of the older and the modern masters.

"For Architects: Atelier work in the Palace drafting-room. Specialized study of French Architecture, past and present, and of its allied arts. Study trips by motorbus to places of architectural interest, covering a wide area.

"For both: Lectures on the History of Painting and Architecture; on the French styles; classes in French and French History, etc. Excursions by motorbus under expert artistic guidance to chateaux, churches, and other monuments of interest in the neighborhood of Paris.

"The American organization is concerned solely with the recruiting of students. It has been placed, by the French authorities, in the hands of Mr. Whitney Warren for the Department of Architecture, and of Mr. Ernest Peixotto for the Department of Painting. They, in turn, have organized the committees that will aid them in making the school known in America and in selecting its students. It is hoped that all parts of our country will be represented in the student body, and for this reason the American Committee is working in connection with the heads of our leading art schools and colleges. It feels that it is offering a unique opportunity to American students.

"The number of students in the School of Fine Arts is limited to one hundred. All applications for admission should be accompanied by a note clearly stating where, with whom, and for how long the candidate has studied: and this note should be supplemented, if possible, by a

letter of recommendation from the director of the school or institution at which the candidate has studied.

"All applications should be made: for architects, to Mr. Whitney Warren, care Beaux-Arts Institute of Design, 126 East 75th Street, New York; for painters and sculptors, to Mr. Ernest Peixotto, care The Mural Painters, 215 West 57th Street, New York.

"By reason of the low cost made possible by the French authorities, the summer session of the Fontainebleau School of Fine Arts is brought within the reach of most students. Board, lodging and tuition fees, with the trips by motorbus alluded to above, are, all included, about \$100 per month. The French steamship line also allows a discount of 30% to students, bringing the price of a comfortable passage as low as \$90. The registration fee is \$10. Thus \$500 would represent the entire cost of a summer spent at the school.

"It is hoped that ateliers, schools and colleges will find scholarships of \$500 each, to be won in competitions, and awarded to the most promising students of their class. As the Fontainebleau School of Fine Arts is an effort on the part of France to render a real service to America, the American Committee feels that a knowledge of this rare opportunity should be clearly brought before every student who would wish to profit by it."

The membership of the Executive Committee in America is as follows: Mr. Whitney Warren, Chairman, Department of Architecture; Mr. Ernest Peixotto, Chairman, Department of Painting; Mr. Edwin H. Blashfield, President, National Academy of Design; Mr. Howard Greenley, President, The Architectural League; Mr. Thomas Hastings, President, Beaux-Arts Institute of Design; Mr. J. Monroe Hewlett, President, The Mural Painters; Mr. Hermon A. MacNeil, President, National Sculpture Society; Mr. James Gamble Rogers, President, Society of Beaux-Arts Architects.

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ART STUDENTS' COMPETITION.

ASCHOLARSHIP Competition open to all art students in the United States, with the exception of those in New York City, will be held at the Art Students' League of New York on March 23, 1923.

Ten scholarships will be awarded to that work showing the greatest promise. Work in any medium, from Life, the Antique, Landscape, Etching, Portrait, Illustration, Composition, also photographs of Sculpture, may be submitted. All work should be forwarded so as to reach the League not later than March 15th, and must be sent with return express or parcel post charges prepaid.

Students entering this competition are urged to send the most comprehensive exhibition possible, to facilitate the work of the Jury. It will be readily understood that the work covering the widest field of Art expression will best enable the Jury to judge of the individuality and promise of the prospective student. The League wishes to emphasize that the Jury will be guided in making their awards, not by the degree of proficiency displayed by the applicants, but by an effort to find interesting individuals whose strength the League desires to add to its own.

The scholarships so given will entitle the holder to free tuition in any two classes of the League during the season of 1923-1924. The Jury will consist of the following instructors of the League: George B. Bridgman, Dean Cornwell, Edwin Dickinson, Guy Pene Du Bois, Frank Vincent Du Mond, Fred W. Goudy, Robert Henri, Charles R. Knight, Richard F. Lahey, Leo Lentelli, Hayley Lever, George Luks, Kenneth H. Miller, Wallace Morgan, Joseph Pennell, John Sloan, Duncan Smith, Allen Tucker, William Von Schlegell, George E. Wolfe.

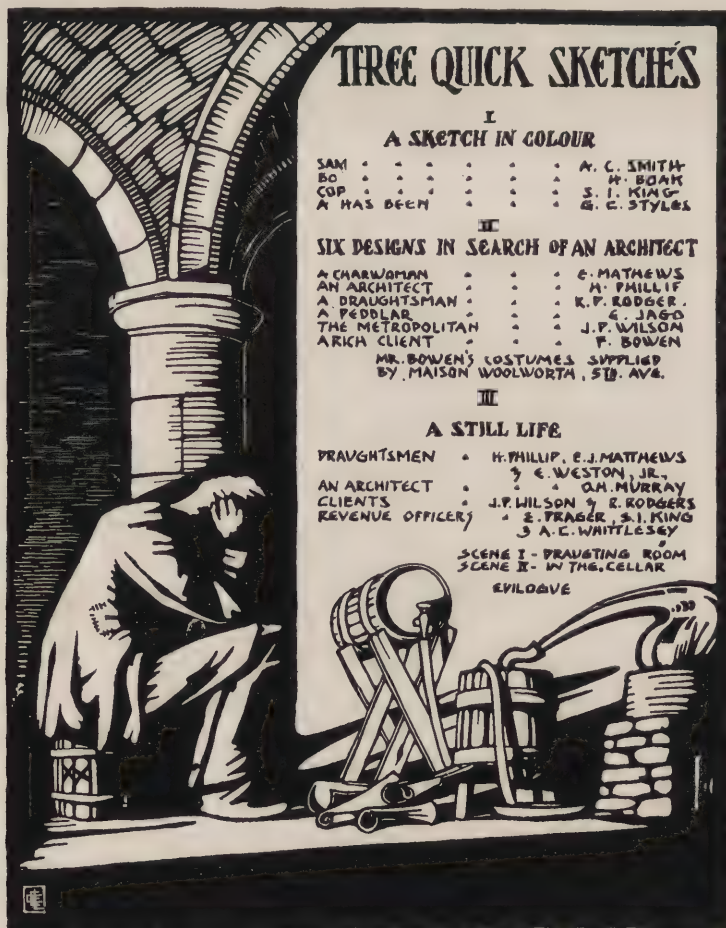
All letters and packages should be addressed: For Scholarship Competition, Art Students' League of New York, 215 West 57th Street, New York City.

SCHOOL CRAFTS CLUB, NEW YORK.

THE January meeting of the School Crafts Club of New York City was a great success, both in regard to a large attendance, and because of the excellence of the program of speakers furnished. This meeting, held on Saturday evening, January 20, in the grill room of Lyons Restaurant on 41st Street, was under the leadership of A. W. Garritt and L. J. Young, Directors of Shopwork in the New York City Schools. Throughout the program, with only one exception, the presentation, rather than the projects themselves, was stressed.

"How shall we get the aim of our shopwork over to our pupils?" was the subject discussed by John Kuhn, of Public School No. 126, Brooklyn. If boys are asked the aim of shopwork, they are likely to reply—"to teach a trade." Lack of time allowed per pupil makes this an impossibility. Some of the real reasons are: (1) Because it is the natural thing for a boy to manipulate tools, man is a builder. (2) General educational aims. (3) Training in usefulness at home. (4) Co-ordinating development of mind and body. Sturdiness and development of intellect go hand in hand for success. Thought should come before action. (5) Accuracy. (6) Order of procedure.

Talks were given as follows: "Forests and Their Value," by J. A. Mackay, Public School No. 95, Queens; "Shopwork Illustrative of Organized Thinking" by A. L. Markwood, Public School No. 46, Manhattan; "When Should Charts be Used," by E. Montague, Public School No. 110, Brooklyn. Charles Mu'ler exhibited glider models.



Program of Twelfth-Night Revel, Bertram Grosvenor Goodhue's Office. (Reproduced at reduced size.)

TWELFTH-NIGHT REVEL OF THE OFFICE OF B. G. GOODHUE.

THE Twelfth-Night revel of the staff of the office of Bertram Grosvenor Goodhue this year was as entertaining and clever as those of preceding years and, like its predecessors, it was marked by many evidences of the close and pleasant relation that exists between the architect and the members of his staff.

The program consisted of three dramatic presentations. The first, "A Sketch in Color," was marked by an amusing comedy; second "Six Designs in Search of an Architect," a farce in one act; and third, "A Still Life," an amusing bit, the subject of which is indicated by the fact that of the two scenes, the first is laid in the drafting room and the second in the cellar. Following the presentation of these little plays, the members of the party gathered, as usual in the large reception room. Features of this part of the evening's program were an address by Mr. Goodhue and the presentation to Mr. Goodhue, by the members of his staff, of a large toy automobile constructed from paper by members of the organization. In connection with this gift an amusing characterization, likening the various members of the organization to the parts of an automobile was read.

These annual entertainments have been a feature in Mr. Goodhue's office for the past sixteen years or so, excepting for the year this country was in the war when there was no play. An interesting history of the Twelfth-Night revel together with the full text of a notable address given by Mr. Goodhue at last year's gathering was printed in the issue of this magazine for February, 1922.



QUERIES

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, 19 East 24th Street, New York City.

Question—Will you please describe in your next issue the process of “rubbing” by which inscriptions or figures can be obtained from a flat, upright surface? J. R. T. **Answer**—In addition to the generally-known fact that such rubbings are made by laying a paper against the surface and rubbing a pencil, marking crayon, or something of the sort across the paper, there are a few little tricks that men who have done the rubbing of many inscriptions have found an aid in their work.

For instance, in order to keep the paper from shifting it is well to take short pieces of adhesive tape, such as is used by surgeons, and stick part of it to the paper and let the other part adhere to the surface. This would be especially helpful to you in making rubbings from inscriptions on a flat, upright surface. For delicate work, such as mosaic, a bond paper that can be had in folio size is convenient and in making a rubbing of large inscriptions a heavier, stiffer paper in large sheets is required.

Where the work is delicate and the surrounding surface rough, the best results are sometimes obtained by smudging dirt on the paper with one's fingers, working out the design in this way. Usually a ball of blacking used by shoemakers on the heels of boots they repair, generally known as a heel ball, is best, especially for inscriptions of large size. This material is a sort of waxy composition and is very black. It is desirable to get it in as large sizes as possible, the usual size being about the size of a quarter. It is sometimes obtainable as large as a baseball. A larger piece is much less tiresome to hold.

Another excellent material is the kind of large marking crayon used in shipping departments for marking boxes. This can be had in red and blue as well as in black.

Question—Can you tell me where I can find information on the planning of orphanage institutions of the cottage plan type? M. S. **Answer**—We would refer you to the Child Helping Department of the Sage Foundation 130 East 22nd Street, New York City. They have a file of plans of a large number of institutions of this type, including the Hebrew Orphan Asylum, which was described and illustrated in the “Architectural Review” for April, 1919.

Question—Will you please give me the names of the publishers of the following books: “Over the Drawing Board” by Lubschez, and “Spain” by Calvert, two volumes? C. T. S. **Answer**—“Over the Drawing Board” by Lubschez is published by the Journal of the American Institute of Architects, New York City, and “Spain” by Calvert, two volumes, is published by E. P. Dutton & Company, New York City.

Question—Will you kindly give me the name of any book now in print that shows any details of Phœnician architecture? C. D. F. **Answer**—We would refer you to the “History of Art in Phœnicia and Its Dependencies” by Georges Perrot and Charles Chipiez, two volumes. Translated into English by Walter Armstrong. Published by Chapman & Hall, London.

GARGOYLE CLUB OF SAINT PAUL.

GROWING from a group of twenty men who met in hotel and office rooms, to an established club, including practically every architect and architectural draftsman in the city, many of whom have won nation-wide and even world-wide fame, and owning one of the most picturesque club buildings in the country, the Gargoyle Club of St. Paul has made for itself a unique place in the history of the city and is a nationally known organization.

The club was established in 1913, according to the constitution, “to create a closer affiliation between St. Paul architects, between draftsmen, and between architects and draftsmen.” Since then its scope has been broadened and it includes landscape gardeners, sculptors and artists in other lines, among its members.

The emblem adopted was a gargoyle, high on a building, overlooking a city. The emblem gained considerable local fame during the winter Carnival, when members of the club, walking inside a huge cloth gargoyle, paraded the downtown streets and were present at every carnival function. That cloth gargoyle met a mysterious fate. On the last night of the Carnival the “beast” made its way to the doors of a local club building, but found the doors locked. The poor gargoyle was left outside in the cold and the “feet” went home. The next morning the gargoyle was gone. He has never been seen since, and is supposed to have dug himself in, after the manner of gargoyles, to escape the cold.

For the first three years after its inception the club met in various places—hotels, office rooms, homes—any place that would accommodate the members. In 1916 the German Bethlehem Presbyterian Church, Oakland and Pleasant Avenues, Saint Paul, was abandoned by its congregation. The Gargoyle Club, both because it felt the need of quarters and because it disliked to see the picturesque little church, which had been designed by Cass Gilbert, later to become an internationally known architect, and which was the object of many visits by tourists, torn down or devoted to commercial purposes, bought it. The building is widely known as one of the most original and unique examples of church architecture in the country.

During the World War, 90 per cent. of its members being in the Service, the Board of Directors of the Club were obliged to lease the building and conduct its affairs, which were confined to a monthly dinner, at one of the other clubs in the city.

At the present time, its members gather once every month for an educational program, which include industrial films, stereopticon slides, speeches, etc. Once a month a social entertainment is conducted, enlivened with music, refreshments and a general good time. Our monthly dinner, at the Athletic Club, is still in force and very well attended.

At one time or another the club, as a body, is invited to make private inspection of buildings, plants and factories. Annual competitive exhibits and picnics have been arranged. All of which have been helpful in promoting the spirit with which the club is working its way to becoming one of the best architectural clubs in the country.

THE SPECIFICATION DESK

A Department for Specification Writers

The contributions printed below were received in response to the suggestion published in the January number that the papers in that issue be discussed with a view to bringing out any additional ideas bearing on the specification problem. It is hoped that all who are interested in the preparation of specifications will feel free to submit their ideas for publication in subsequent issues of PENCIL POINTS.

A SYSTEM FOR OBTAINING ACCURACY AND COMPLETENESS IN A SPECIFICATION.

By Selig Whinston, of B. H. & C. N. Whinston,
Architects, New York City.

ALL of your contributors to the last issue on the writing of specifications agree on the necessity of obtaining completeness in writing a specification, yet few present any definite and developed system for obtaining just that which they all strive for. That is the deficiency which I propose to fill, with your consent.

It is apparent that the specification, in order to be complete, must contain some mention of each and every item of work necessary to construct and completely finish the building. It is also apparent that the drawings, properly read and interpreted with a view to the work of the actual construction of the building, together with all the notes thereon, and with all mental notes formed by the experienced builder, (be he architect, superintendent, draftsman or contractor) of the necessary preparatory work required to make the installation of each item of the finish of the building possible,—that all these drawings, notes, and mental conceptions contain all items necessary to be incorporated in the specifications in order to make the same complete. These items, then, supplemented by clauses pertaining to general work required to be done on every building operation, statements as to guarantees, quality, insurance, etc., etc., fitted into their proper places in the composition of the entire specification, make up, as far as I can see, *The Complete Specification*.

The general clauses can be obtained from a number of sources. The real problem is the casting of the drawings, so to speak, with all their notes, inferences, implications, and with all the mental notations which arise in reading the drawings, into the specifications by breaking up all this information into specific references to each of the multitude of component minutiae which go to make up the completed building, properly indexing them by placing them under their respective headings, such as "Excavating," "Concrete and Cement Work," "Mason Work," or whatever it may be, arranging the matter under the heading in logical and systematic form, and then giving the actual specification which determines exactly what that item is to be.

Now, how can all these items be assembled with the assurance that everything required for the building is included?

The system I use is somewhat more elaborate than any of those mentioned by your contributors. The "mental conception of the entire building," mentioned by Mr. Ward, is, beyond a doubt, essential. I go further, and completely analyze each and every detail of the building, especially those where the work of a number of trades come together and must coincide,—as suggested by Mr. Holske. I make these analyses by carefully and thoughtfully sketching out the actual details at a small scale, on a pad of paper, studying the same until I arrive at my best possible arrangement, later giving these sketches to the draftsman for drawing up at the proper scale. This preliminary work completed, I then take a set of blue prints made before the dimensioning of the drawings has been done, and several hundred slips of paper about $\frac{1}{2}$ " x 3", begin at the upper left hand corner of the uppermost sheet, and closely and carefully examine the drawing, checking off each item shown or note written thereon, with a small dot, and immediately thereafter writing that item down on the slip, condensed to save labor, following that with slips for each preparatory item required in conjunction with the item indicated on the drawing. For instance,—I come to an item "Tile floors, base and 5'-0" wainscot in all bathrooms,"—the building being brick walls and wood beam construction. I make one slip "Deafening in bathrooms" for the boards placed between the beams to receive the concrete foundation for the finish tile floor; then a slip, "Concrete foundations for tile floors"; next, "Tile floors in bathrooms"; next, two slips, "Base and 5'-0" tile wainscot in bathrooms"; one to be filed under tile contract heading, and the other under plastering contract heading; next a slip "Metal lathing for tile wainscoting in bathrooms," if such be required; next a slip, "Scratch-coating for tile wainscot-bathrooms." Should waterproofing, or any other supplementary items be wanted, independent slips are made out for them. This procedure is maintained until the lower right hand corner of the lowest sheet is reached, carefully going through the entire set of drawings, making sure, beyond a question of a doubt, that everything is perfectly understood by the writer and that everything is immediately noted on the slips, never relaxing the vigil until the end has been reached and passed. Notes made during conferences with the owner are also itemized in this manner on the slips. All itemizing done, the slips are generally sorted according to the various trades, care being taken to include no work under the heading of a trade that is not done by that trade. The next step is to take the slips pertaining to the first

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trade to start work on the job and classify them further, putting all slips referring to one item of work together,—to be mentioned under a single paragraph heading in the finished specification. For instance,—the slips for "Carpenter Work" for a small brick building may be divided into the following items: Framing, Furring, Rough bucks, Rough flooring, Roofing boards and blocking, Deafening, Grounds, Stairs, Finish flooring, Trim and Millwork, Saddles, Application of finishing hardware, cutting, etc., etc., etc., and so covering all items to be done under that contract.

All this ground work having been completed, the actual writing of the specifications is then begun, and this then, resolves itself down to very little more than carefully transferring the information contained on the slips to the actual specification sheets, elaborating the condensed notes as may be necessary to convey in unmistakable terms a clear idea of what is wanted. I use no unnecessary words, but each requirement having any effect on the price to be figured for the item, the quality wanted, or the condition to be met, is mentioned,—or, to use a term of logic, every characteristic, having as its concomitant any material variation in either the bid or the product, is specified.

There yet remains to be explained the final arrangement of all the items, general clauses, etc., in the completed specification;—the "get up" as some-one has mentioned.

All my specifications, and they are all written so that any trade may be awarded separately from the rest, start immediately with "Scope of Contract" under which I stipulate what is included under the contract, listing all items as was indicated above, and including any general items such as removal of rubbish, watchman, fences, water, etc., which it may be desired to incorporate in the contract for the trade in hand, buttressed with provisions covering minor items inadvertently omitted. The next paragraph is headed "Similar Work Under Other Contracts," under which I make mention of anything which might affect the bid in this respect; then comes "Quality" which gathers under one heading all references to quality, ordinarily scattered throughout the length of the specification; then "General" under which all special general conditions, not covered by the A. I. A. or Uniform Contract general conditions, are stipulated; then follows in regular order, the amplification of the items included under "Scope of Contract" until everything to be done under that particular sub-contract or trade is covered, and points of contact with the other sub-contracts specifications are properly aligned and coordinated, fashioning the specification into a comprehensive whole, a body complete in itself, which when combined with the specifications for the balance of the trades, each in itself also a whole, form the result so much to be desired: the complete, ideal specification for the entire building.

All of the foregoing may appear to be tedious and laborious in execution. On the contrary, this system enables one to do the brain racking work of specification writing with surprising ease; and what

is more important, with confidence, assurance, and power; and the results of such a specification cannot fail to be anything but harmony with the contractor, a clear understanding of just what is included in a contract and what is distinctly omitted, and increased respect for the architect's business sense and buying ability from the contractor and owner, a clarifying of the entire business of "buying building construction work" so that the entire transaction becomes as simple and free from obscurity as that of a housewife presenting her carefully prepared shopping list to her grocer or butcher, and receiving the goods over the counter as ordered, or a modern and progressive purchasing agent who goes into the market knowing exactly what he wants to buy, and getting it.

THE EFFECT OF THE STANDARDIZATION OF BUILDING MATERIALS UPON SPECIFICATION WRITING.

By A. Lynwood Ferguson of the Structural Service Bureau, Philadelphia, Pa.

PROBABLY no one feature of building construction has received more attention during the past several years than that of the standardization of building materials. The Department of Commerce has even established a division to promote the idea of simplified practice, as it is termed. It is certain that nothing more important has been or could be accomplished to relieve the architect of individual effort, time and expense involved in the writing of architectural specifications. Yet few architects seem to have familiarized themselves with these various standards to which it would be so much to the advantage of themselves and their clients to refer. It would be difficult to cover such a broad subject in the small amount of space allowed in this issue, but the following will serve as an indication of the work already accomplished in this field.

Among the organizations which have established standards for building materials perhaps the most well known is the Bureau of Standards in Washington, D. C. The work of the Bureau in the testing and investigating of the properties of structural materials was taken up and is carried on primarily for the needs of the government in its structural work, but this information is just as necessary to the public in construction work and every effort is made by the Bureau to present its findings in a form available to the public generally.

The American Society for Testing Materials has for its purpose the promotion of knowledge of the materials of engineering and the standardization of specifications and methods of testing. Reference to the "Standards of the American Society for Testing Materials" in architect's specifications furnish a brief form of securing an assured product and an equitable basis for contractor's estimates.

The American Society of Civil Engineers, American Society of Mechanical Engineers, American Railway Engineering Association, The National

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Fire Protection Association, The National Board of Fire Underwriters, Underwriters' Laboratories, Associated Factory Mutuals Laboratories, and many other national and international organizations have prepared standards as to materials and their correct application to insure the most efficient use possible with a maximum of fire and life safety. Such investigations as those being conducted by the Bureau of Research of the American Society of Heating and Ventilating Engineers on thermal-conductivity, insulation and air leakage will prove of inestimable value to the architectural profession.

The building materials industries are practically all organized into associations of producers and many of these are expending much time, effort and money each year in the investigation and standardization of their various products.

Among the many manufacturers of building materials and associations of producers who are trying to standardize their materials to promote efficiency, encourage year-round employment and simplify specification writing only a few can be mentioned here.

The Associated Tile Manufacturers have prepared publications such as Basic Information and the Basic Specification which will prove of inestimable value to the architect in his specification writing. The slate industry has recently so standardized all the slabs and parts which go to make up enclosures, shower stalls, stairways, etc., that on two small sheets of paper can now be shown the various but comparatively few parts which are required to make over one hundred and thirty fixtures of any size or combination likely to be desired. Advantage may be taken of these by specifying by type and standard size without preparing detail drawings for each.

Other associations of manufacturers which have adopted standards and specifications for their products are The Common Brick Manufacturers' Association, the National Terra Cotta Society, the American Face Brick Association, Portland Cement Association, and the Associated Metal Lath Manufacturers. The Lumber Industry is working now on a program for the formation of grading standards and the standardization of sizes of lumber and mouldings. Probably many other organizations are working along similar lines.

And yet how few architects avail themselves of this opportunity to use standards already established. The American Institute of Architects realizing that a book would be needed to even list the many government departments, societies, associations and other organizations which are working on standardization of building materials, prepared and issued the Structural Service Book. Every architect should encourage such investigations and should utilize as far as possible the data thus prepared, for it will mean the elimination of a tremendous amount of individual effort, time and expense in the preparation of specifications and detail drafting, it will permit industries to keep production well in advance of demand, insure more constant employment of workmen, furnish a uniform basis for estimates, reduce the cost of building, and finally, assure a

higher degree of safety and efficiency during and after construction.

A LETTER ON SPECIFICATION WRITING

From Clarence Wilson Brazier, Architect,
Chester, Pa.

YOUR January issue concerning specifications has been read with considerable interest and I find myself in agreement with most of the comments therein.

I am a firm believer in standard specifications written upon 4 x 6 in. cards in double space type, allowing for interlineation.

Where possible the (a) Necessary, (b) Economical, (c) Good, (d) Elaborate, Choice Methods or qualities, to be briefly covered on the same card.

By using the cards instead of an old specification one has at the same time a complete checking list and the cumulative result of his experiences in practice so that the standards of quality as corrected from experience, practically give an insurance against omissions.

By simply placing a parenthesis about the matter not germane, superfluous words can be kept out of the final specifications but remain as a reminder for future work.

We have in this office a standard classification given below for the trades, including Landscape Work and Furnishings, with which an architect comes in contact for the completion of his picture.

These have been grouped into ten major divisions each sub-divided into ten minor divisions as near as possible in the order in which the work is done upon the building or in which the trades are sometimes allied in various sections of the country.

1 *General Contractor's Work*:—11—Description of Competitive Drawings; 12—Outline Specifications; 13—Proposals; 14—Contracts; 15—General Conditions; 16—Preliminary Work; 17—Temporary Work; 18—; 19—Building Laws.

2 *Site Work*:—21—Moving and Underpinning; 22—Wrecking and Demolition; 23—Excavation and Grading; 24—Roads and Pavements; 25—Land Drainage; 26—Sewage and Garbage Disposal; 27—Well Sinking and Water Supply; 28—Planting and Gardening; 29—Piling and Bulkheads.

3 *Rough Masonry*:—31—Masons' Work and Materials; 32—Concrete and Reinforcement; 33—Stone Masonry; 34—Cut Stone, natural and manufactured; 35—Brickwork; 36—Terra Cotta, Structural; 37—Terra Cotta, Ornamental, Architectural and Faience; 38—Damp and Waterproofing; 69—.

4 *Finished Masonry*:—41—Plaster Block and Board; 42—Furring and Lathing; 43—Plastering and Stucco Work; 44—Paving; 45—Cork Tiling; 46—Tiling; 47—Terrazzo; 48—Interior Slate, Marble and Scagliola; 49—.

5 *Metal Work*:—51—Structural Metal; 52—Vaults; 53—Miscellaneous Metal; 54—Art Metal; 55—Metal Sash, Doors and Trim; 56—Screens; 57—Weather Strips; 58—Roofing and Sheet Metal and Kalamein Work, Metal Ceilings; 59—Hardware.

PENCIL POINTS

6—*Woodwork*:—61—Timber; 62—Carpentry; 63—Millwork; 64—Stair Building; 65—Cabinet Work; 66—Flooring; 67—Glazing; 68—Painting and Decorating; 69—.

7—*Mechanical*:—71—Heating and Ventilating; 72—Steam Power Plant; 73—Plumbing; 74—Gas Fitting and Generating; 75—Refrigeration; 76—Hydraulic Elevators; 77—Kitchen Equipment; 78—Laundry Equipment; 79—.

8—*Electrical*:—81—Electric Wiring; 82—Electric Fixtures; 83—Bell Work; 84—Clock Work; 85—Elevators and Dumbwaiters (Electric and Hand); 86—Mechanical Cleaning; 87—Mechanical Carrier; 88—Moving Picture Equipment; 89—Pumps.

9—*Miscellaneous*:—91 Auxiliary Fire Apparatus; 92—Wood Furniture; 93—Metal Furniture; 94—Upholstery; 95—Furnishings; 96—Lightning Conductors; 97—; 98—; 99—; 100—.

All catalogues of manufacturers are classified in vertical files in accordance with this standard classification. Every specification card bears the general classification number and, after a decimal point, the number of the card in such subdivision, thereby enabling the office boy to refile same in its proper place after having been typed.

While such a method probably does take a little longer, yet this is so with everything that must be thorough, and our experience is that the number of extras due to oversight is practically nil. It will be noted that room is left in some places for expansion.

MEASURING SAND FOR CONCRETE.

THE reliability of concrete construction is likely to be increased, and the cost in some cases reduced, by the application of a newly developed method of measuring sand, which is now being tested at the Bureau of Standards of the Department of Commerce. The method has been termed the "inundation method" and consists of measuring sand in a container which has been partly filled with water before the sand is put in, so that when the sand is in, the water is up to the top and the sand completely soaked.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Architectural Metal Work.—Handsome brochure in sepia illustrating numerous examples of bronze and wrought iron work as installed in recent buildings. 10½ x 14 in. 32 pp. The Flour City Ornamental Iron Co., Minneapolis, Minn.

Color in Architecture.—Brochure illustrated in color plates and numerous engravings in sepia, on the basic principles of the application of color in available mediums. 8½ x 11 in. 38 pp. The National Terra Cotta Society, 19 West 44th St., New York.

Lighting Service for Banks and Insurance Companies.—Brochure illustrated by engravings and diagrams showing both direct and indirect lighting equipment suitable for use in banking and similar buildings. Contains much practical data. 8 x 11 in. 32 pp. I. P. Frink, Inc., 24th St. and 10th Ave., New York.

(Also "Lighting Service for Hospitals," "Picture Lighting" and "Lighting for Stores.")

Seamless Brass Pipe.—Bulletin No. 1, A. I. A., classification 29 B4. Illustrated bulletin with tables, price lists, weights, etc. Typical layouts of hot water systems of various kinds. 7¾ x 10¾ in. 24 pp. Rome Brass & Copper Co., 105 Dominick St., Rome, N. Y.

Anchor Post.—A monthly illustrated magazine covering subject of fencing for all conditions. Contains much material of interest to architects. 8 x 11 in. Anchor Post Iron Works 54 Church St., New York.

Electric Time Systems.—Loose-leaf portfolio containing information on this subject as applied to schools, banks, hospitals, libraries, hotels, public buildings, railway terminals and manufacturing plants. 8½ x 11 in. 60 pp. International Time Recording Co., 50 Broad St., New York.

Audible Calling Systems.—Bulletin covering this type of equipment for many different uses and under varying conditions. 8½ x 11 in. 16 pp. Holtzer-Cabot Electric Co., 125 Amory St., Boston, Mass.

(The following bulletins are also available on application. "Fire alarm Apparatus," "Inter-communicating Telephone Systems," "Annunciators and Signaling Apparatus," "Bells, Buzzers, Horns, Push Buttons and Relays" and "Magnetic Clock")

Painting Specifications.—Specifications covering new and old work, plaster, cement and concrete; iron and steel; repainting iron and steel; galvanized iron and steel; galvanized or zinc coated iron; copper and zinc flashings; tin roofs etc.; interior—complete specifications for all kinds of interior work. 14 pp. fully indexed. 8½ x 11 in., published by New Jersey Zinc Co., 160 Front St., New York.

Zinc Spouting.—Four booklets dealing completely with this subject. Detail drawings and other useful data. Illustrations of finished work. Tables of costs, charts, etc. Published by New Jersey Zinc Co., 160 Front St., New York.

Specification Data Sheet.—Contains information regarding Ventilouvre, a specially designed ventilator for use in doors and transom space. Full page drawing showing details. 8½ x 11 in. Ventilouvre Co., 103 Park Ave., New York.

The Right Angle.—Waterproofing issue. Covers subject of waterproofing concrete. 8½ x 11 in. 16 pp. General Fireproofing Co., Youngstown, Ohio.

Atlantic Terra Cotta.—No. 9 of this series illustrates several notable examples of terra cotta of the Fifteenth Century. Atlantic Terra Cotta, 350 Madison Ave., New York.

Handy Book on Painting.—A valuable compilation of painting data, covering formulas and methods of application for all classes of work. Vest pocket size. 3½ x 5½ in. 100 pp. National Lead Co., 111 Broadway, New York.

Pumping Bulletin.—Loose-leaf bulletin No. 45 containing specifications, drawings, tables of sizes and capacities of various types of centrifugal pumps for use in buildings. A valuable handbook on the subject. 8½ x 11 in. 60 pp. Chicago Pump Co., 2300 Wolfram St., Chicago, Ill.

A Series of Bulletins have been compiled by the Edison Lamp Works of the General Electric Company, giving complete Lighting Data relative to several types of Industrial Buildings, Automobile Garages, and Display Room Lighting, and Street Lighting. Size 6 x 9 in., and contains 32 pages each. May be obtained by addressing Edison Lamp Works, of General Electric Company, Harrison, N. Y.

Syphon Heating Specialties.—Technical handbook containing valuable tables, specification data, etc., for all types of steam and hot water heating. 3½ x 6½ in. 144 pp. The Fulton Co., Knoxville, Tenn.

Lupton Steel Windows.—Illustrated specifications brochure, No. 110. Windows for apartments, residences, schools, industrial plants, etc. Working drawings. 8½ x 11 in. 72 pp. David Lupton's Sons Co., Alleghany Ave. and Tulip St., Philadelphia, Pa.

Frame Construction Details.—Book containing 28 plates dealing with practical problems arising in the construction of frame buildings; to serve as a guide to those engaged in actual construction work, to prospective builders, to architects, and to students of architecture and building construction in the preparation of drawings. 8½ x 11½ in. Price \$1.00. Published by the National Lumber Manufacturers' Assn., 750 McCormick Bldg., Chicago, Ill.

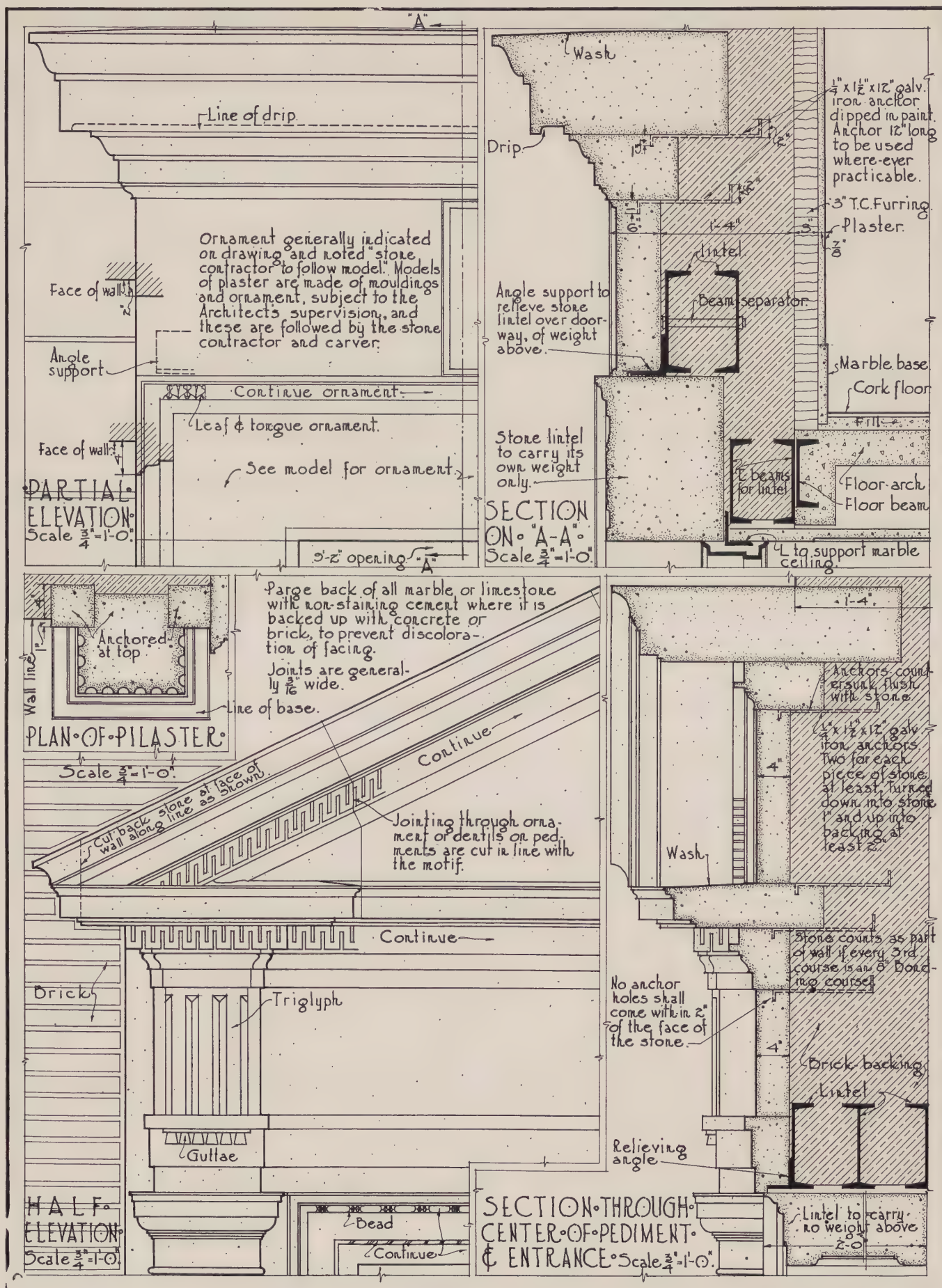
The Modern Method of Ash Disposal.—Illustrated booklet, 6 x 9 in. 8 pp. Published by the Sharp Rotary Ash Receiver Corp., Springfield, Mass.

Composition Flooring Specifications.—Covering Sanitary floor, base and wainscoting. Franklyn R. Mueller & Co., Waukegan, Ill.

Asbestone Composition Flooring.—Booklet containing illustrations and color suggestions for Asbestone Composition Flooring. 8½ x 11 in. 8 pp. Franklyn R. Mueller & Co., Waukegan, Ill.

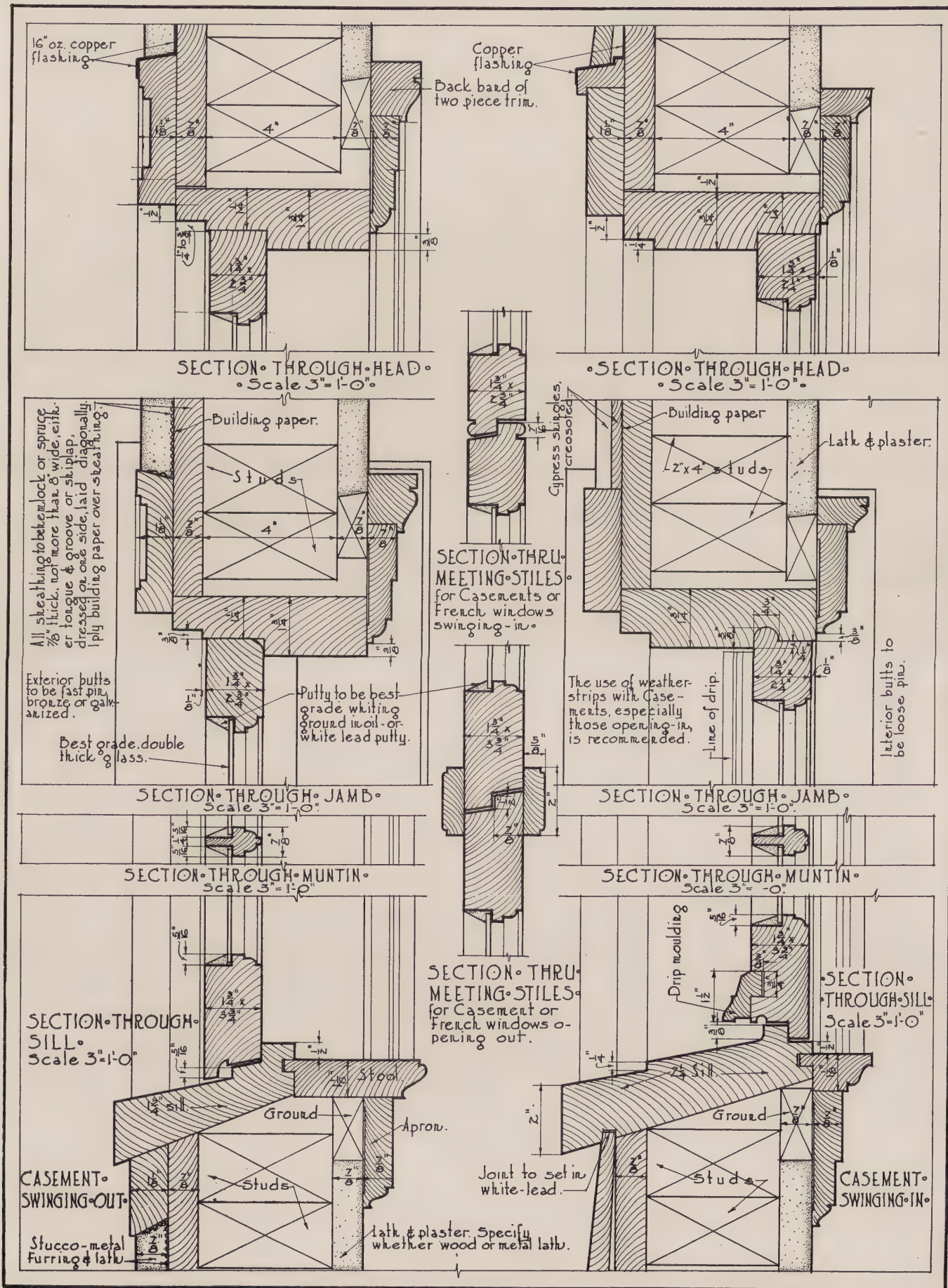
Asbestone Everlastic Magnesite Stucco.—Booklet containing illustrations and specifications. 4 x 9 in. 24 pp. Franklyn R. Mueller & Co., Waukegan, Ill.

PENCIL POINTS



Details of Stone Doorways, from Philip G. Knobloch's "Good Practice in Construction."

PENCIL POINTS



Details of Wooden Casement Windows in Frame.

WANTS



Advertisements in this column five cents a word, none less than \$1.00. Remittance must accompany order.

DRAFTSMEN—Wanted immediately several good, senior, high class draftsmen, experienced in Hospital and Church work. Reasonably permanent positions if satisfactory. Write stating age, experience, salary, and send specimens of work with first letter; general drawings, large scale and full size details. **RITCHER & EILER, 147 NORTH FIFTH STREET, READING, PA.**

WESTERN POSITIONS—Several openings for well qualified architectural draftsmen in Colorado and adjoining states. Write Business-Men's Clearing House, Denver, Colorado.

ARCHITECTURAL DRAFTSMAN wanted at once for permanent position in city of 40,000 population; experience on residences and small school buildings necessary. Apply to Geo. Barkman, Architect, Hamilton, Ohio.

WANTED: Architectural draftsman. Must have several years' experience and a college training. P. L. Small, 220 Union Bldg., Cleveland, Ohio.

WANTED: Good draughtsman by Barber & McMurry, Architects, Knoxville, Tenn. Must have ability to make accurate and complete working drawings from preliminary sketches. Beaux-Arts Atelier in connection with this office.

POSITION WANTED: Junior architectural draftsman, student of Columbia Extension, desires position with opportunity for advancement. Address Pencil Points, 19 E. 24th St. Box 63.

SENIOR DRAFTSMAN—Wanted immediately, thoroughly experienced senior draftsman, technically trained preferred, capable of acting as job captain in developing complete working drawings and details from sketches on high grade public and semi-public work. Write stating age, experience, salary and send specimens of work, general drawings and details. **HERBERT M. GREENE COMPANY, ARCHITECTS, DALLAS, TEXAS.**

A WELL ESTABLISHED FIRM in a Southern City of 200,000 population wishes to secure a competent draftsman who can design, make quick sketches and neat accurate working drawings for domestic work and who is willing to give his best efforts for the opportunity of becoming identified with the firm, after proving his worth. A young man of ability and of clean habits and morals will find this a good proposition. In answering, state age, experience and names of previous employers. Address Box 62, care of Pencil Points, 19 E. 24th St., New York, N. Y.

WANTED: Several architectural draughtsmen of experience and one superintendent of construction. State salary expected, experience, and other details. **Guilbert & Betelle, 546 Broad St., Newark, N. J.**

TRAVEL: Architectural student who intends to go to Europe for three months about May 15th, would like to arrange to travel with a group of individuals of similar intentions. Address Box 64, PENCIL POINTS PRESS, Inc., 19 East 24th St., New York.

THE AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LeFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following:

"The chief event of last month was the arrival of Messrs. Faulkner and Manship, who have come to work up the Thrasher-Ward Memorial. Mr. Faulkner and

Mr. Manship are both former Fellows of the Academy, and it is, therefore, peculiarly fitting that they should undertake to design a memorial for two other former Fellows, Thrasher and Ward, who died during the great war. Mr. Ward's uncle has generously agreed to pay for the actual cost of the memorial and the trustees are providing for the expenses of Messrs. Faulkner and Manship out of interest derived from the funds collected in memory of Mr. Frank D. Millet at the time of his tragic death on the Titanic. The central bay on the library side of the courtyard has already been prepared for the memorial and the artists have had a model of the bay made and are now studying fresco processes. They plan to make the upper portion a fresco depicting, in a symbolic way, a youthful Fellow of the American Academy embarked upon a voyage of discovery among the great artistic wonders of Europe; the lower portion contains the dedicatory inscription and a carved marble seat where future academicians may repose and ponder.

"Professor Showerman has just finished his interesting set of lectures upon 'Eternal Rome,' much to the regret of those who have been listening to him. At his last lecture there was an enthusiastic 'demonstration' in his favor, the like of which I have not seen during the eleven years I have been in Rome.

"Mr. Henry Osborn Taylor has delivered the first of his two lectures on 'The Formative Elements of the Mediæval Mind.' The lecture was well attended and much appreciated.

"We have visited the famous Torlonia sculpture gallery in the Trastevere. Senator Lanciani kindly consented to lecture to us and, as he had aided in the excavation of many of the statues themselves, what he had to say contained many an interesting anecdote. As it is difficult to obtain permission to see this collection, we invited the students of the French Academy, Spanish Academy, and English School to go with us. Such visits as these, where the students from the various academies mingle, is about as far as we have progressed at present with the scheme of an association of national academies in Rome. Any year, however, may see a more closely knit association.

"The gifts of the month consisted of about one hundred and fifty books from the estate of Mrs. W. H. Hurlbert, a relative of Trustee George B. McClellan; Lire 500 from Mr. John Gray for the library; and one thousand dollars from Miss Isabelle Ballantine for the library.

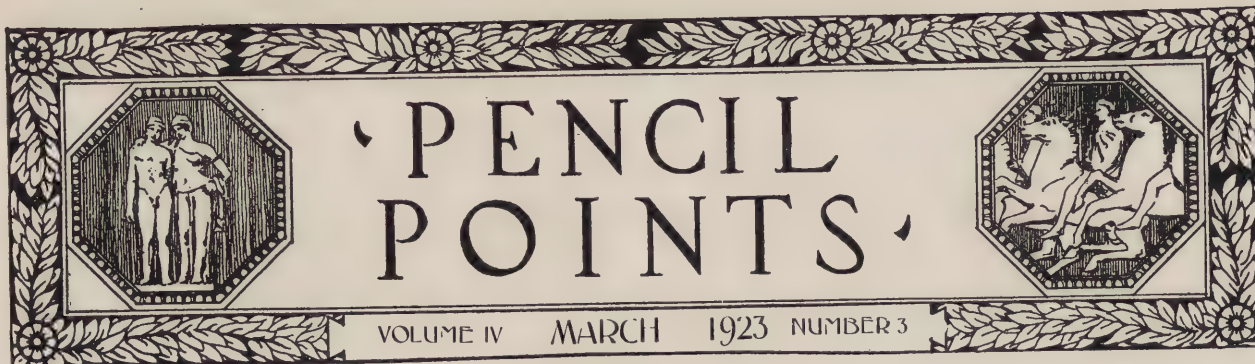
"The head of the Architectural Department of the Massachusetts Institute of Technology has asked me to obtain for his department full-size plaster casts of the column and pilaster capitals of the Pantheon, Temple of Mars Vengeur, Temple of Castor and Pollux, and the Portico of Octavius. These casts were made years ago for the French Academy and the director of that institution has kindly agreed to let us have copies made. It is a great opportunity. We ought to have a set at our academy but economy is the watchword now.

"Roumania is to have an academy in Rome. The new director called a few days ago. They have only archaeologists at present but as soon as their funds are sufficient, artists are to be added.

"We have had a visit from Mrs. George Montgomery Tuttle, President of the American School of Music at Fontainebleau. It is planned to add painters, sculptors, and architects to the school.

"We had a most successful Thanksgiving dinner, thanks to the enthusiasm of those students who were selected to manage it. Sixty-six sat down at table. Rev. Theodore Sedgwick, Rector of Calvary Church of New York, made an excellent Thanksgiving speech. The checks for the Collaborative Prize winners of last year arrived just in time to be handed over at this meal to three lucky competitors. It was really a remarkable dinner for thirty-three cents a plate. After dinner, dancing, pool and bridge were in order.

"The sad death of former Fellow Harry I. Stickroth, Painter, which took place in Chicago on October 17th, is a great loss to his profession and to his friends. He was a young painter of the greatest promise and it is indeed hard to realize that the hand of death has arrested his steps."



SAVING LOST MOTION

EVERY bit of energy or of time that is consumed unnecessarily in accomplishing a purpose is a dead loss. That is obvious. But how great this loss is in all the branches of the world's work is not often appreciated, and in architectural practice this loss exists to a considerable degree. Every means of preventing this lost motion is as valuable to the draftsman and the student as to the practicing architect. Unless one goes about every part of the work in the most direct way—the way that saves time and energy—the loss is at least partly his, for the value of his day's production is lessened. For this reason it is highly desirable, that as full an exchange of ideas as possible should take place among draftsmen and architects to the end that the most effective means of doing drafting room work may become generally known. This can be accomplished in a great degree through the pages of PENCIL POINTS, partly by the printing of letters from men who have worked out some stunt or short cut in practice, and partly by publishing articles by men who have given special attention to some phase of the work. For instance, the article "The Distant Vanishing Point" by Professor Martin, of Cornell University, which was published in this journal some time ago, was a practical help to many. One architect in New York told us that in his office at that time they needed to lay out a perspective and one of the vanishing points would have been "somewhere over in Brooklyn," as he expressed it. The copy of PENCIL POINTS with that article was at hand, and by tacking a few straight sticks on the drafting board, as described, the troublesome vanishing point was easily handled. There are innumerable other time saving methods that should be described. You are invited to send in a description of any you may think will prove of interest.

Lost motion in acquiring knowledge of architecture is a thing that systematic study is designed to minimize, such a method as that provided by the program of the Beaux-Arts Institute of Design for instance. In order that the maximum benefit might accrue to those of our readers who were following this course we began publishing two years ago, the series of articles "The Study of Architectural Design," by John F. Harbeson.

A fact that may well be emphasized here, though it is widely recognized, is that a systematic method

of working out a solution of each problem that arises in architectural practice is of the highest importance. In this connection it may be said that the habit of orderly and logical procedure is one of the most valuable results of the Beaux-Arts training.

In sketching and in learning to sketch, much time is usually wasted for lack of adequate guidance. To supply this need Mr. Guptill's articles were published in this journal, and later his book was published, containing much additional matter.

In detailing the construction of buildings much time is consumed because of the lack of adequate reference material in convenient form. To remedy this condition in some measure, we have just published Mr. Knobloch's "Good Practice in Construction."

Both in the pages of PENCIL POINTS and in the books of the PENCIL POINTS LIBRARY, we are endeavoring to help our readers save lost motion. Your suggestions regarding subjects for treatment in the magazine or in our books, as well as letters describing time saving methods of working, will be welcomed.

TRAVELLING EXHIBITION.

THE travelling exhibition of sketches selected from among those submitted in the Birch Burdette Long Sketch Competition for 1922, is now on its way from coast to coast.

It will be shown at the Massachusetts Institute of Technology in Boston, March 26 to April 3, inclusive, and will then go to Pratt Institute, Brooklyn, New York City, where it will be on view April 7 to April 14, inclusive. The T-Square Club, Philadelphia, is next on the schedule. From Philadelphia the exhibition will move westward until it reaches the Pacific Coast. So many more architectural clubs have applied for this exhibition than applied for last year's similar collection, that a much longer schedule of stops has had to be arranged for.

The exhibition consists of sketches by the prize winners and by those who received honorable mention, with a large number of other sketches from the competition. It is the exhibition that was shown at the Architectural League of New York, considerably augmented, and comprises sketches in a great variety of mediums and combinations of mediums.

PENCIL POINTS



View from West Street, New York City. Sketch in Lithographic Pencil, by Otto F. Langmann.

SKETCHING IN AND ABOUT THE CITY

BY OTTO F. LANGMANN

Mr. Langmann's delightful sketches of city architecture are familiar to most men engaged in architectural work and many of his sketches have been published in this journal. In this article, Mr. Langmann gives in an informal way some of the results of his experience in sketching in and about the city, telling how he selects his subjects and how he works.

EVERY city affords interesting subjects for sketching, some it is true are richer in material than others, but everywhere there is something of pictorial interest, whether it be tall buildings, monumental works of architecture, docks, grain elevators, great industrial plants, or little old houses that have remained from an earlier generation. The same principles apply everywhere, so, though my experience has been derived from sketching in and about New York City, what I have learned can, in the main, be applied to sketching in any city.

I have gone about the city sketching a great deal during the summer months and have derived much pleasure from the practice. If anything I can say will stimulate others to go and do likewise, I shall feel no small satisfaction. The mere exploration of the various foreign sections of the city, the contact with the people and the pleasure in discovering an attractive detail or street scene are in themselves sufficient. Added to that comes the contentment which comes, perhaps not at first, but almost invariably later on, with the feeling that one has done something "worth while." A score or more of sketches, at the end of a season, represent a "good" summer, and sketching in no wise interferes with my other pleasures and activities; one does the sketching and all the other things

besides—only it takes a little practice and system.

And now for a few empirical rules and suggestions. I wish in no way to go into the minutiae of the subject of sketching, for I leave the matter of training in these matters to textbooks and professors. I assume that you all know how to draw and that what you wish to know is simply what I have

found it interesting to sketch in the city—particularly in this city which is usually thought of as commonplace and lacking in poetry,—and how the thing can be done comfortably, without disturbance from the crowds of people that usually throng the streets.

My first piece of advice is: Don't spend too much time looking for a subject. Have something in mind before you start, and go straightway to it, because the longer you search, the more exacting you become, and the less satisfactory will be the finished result. A product of the fading hours of a summer's day, made with teeth set, in the grim determination to do or die, is perhaps less satisfactory than no sketch at all. That is where my "experience" comes in. My own way of doing is to take an afternoon for no other purpose than that of marking or "spotting" subjects; or you can do the same while passing through various places on some errand or other. Note the subject, and the hour at which the light would be most favorable, i.e., whether it



Sketch by Otto F. Langmann. Wallabout Market, Brooklyn. In Red Pencil on Japanese Paper.

PENCIL POINTS



*A Bit of Old New York. Sketch in Lithographic Pencil, with Touches of Colored Pencil, by
Otto F. Langmann.*

PENCIL POINTS



Old Building on East 29th Street, New York City. Sketch in Lithographic Pencil, with Touches of Colored Pencil, by Otto F. Langmann.

PENCIL POINTS

be a morning or afternoon subject, and anything else that might be of interest. When the proper time arrives, or rather when the inspiration does, then proceed without any delay, and get the thing done quickly. I have seen so many men lose an opportunity, just because they did not pursue this method, that I regard it of importance.

And that brings me directly to the second point. Don't go out in sketching parties, but limit your number to two or three. Proverbially even three is a crowd, but in sketching I have found it bearable. However when there are more, it is difficult to choose a subject satisfactory to all, or even a neighborhood upon which all will agree, and you are almost sure to attract undesirable attention, because where one or two can pass unnoticed, the presence of three or more will make the "natives" suspect and expect something exciting.

In the matter of choice of subject, I would caution against one too ambitious or elaborate. The use of easel or large board is positively out of the question, and a small sketch finished is worth many of the unfinished kind. My own practice is to make a small sketch, finish it at one sitting, and not to touch it after I get home. Hopkinson Smith, in his book on outdoor sketching, says that it takes two men to make a masterpiece, one to do the drawing, and the second to kill the first when he has arrived at the finished stage, and is not aware of it. Therefore, a party of two, who could indulge in mutual slaughter, would seem to be ideal.

If the subject encompasses a large area, by making the sketch small you eliminate most of the detail, and if you choose a bit of detail, you can concentrate on the particular subject which attracted you, vignetting all the ugly things that lie to the right or left. The old junk shop on Twenty-ninth Street, shown on page . . ., is very picturesque and the building a remnant of Colonial times, but the surrounding buildings, only indicated here, are tenements of the most commonplace design. And very often a subject can be made attractive simply by the forcing of a detail, as for instance a rather box-like building, with a picturesque tree, or through an archway. There is much of this type of thing in New York, and when you once get started you will be surprised how much beauty there is in places where you had never before suspected it.

Just let me mention a few of the possible subjects; some you undoubtedly know, others may be new to you. There are the high buildings, seen either through the canyon-like streets, or as I prefer them, seen from the river fronts, towering over the small buildings of an earlier generation. The sketch on page . . . illustrates the effectiveness of this view. And incidentally those river fronts provide admirable sitting room on a Saturday afternoon or Sunday, to say nothing of the other delights which river fronts usually furnish. Then there are the markets, Fulton, Wallabout, Washington, Gansevoort, and the informal scenes in the streets. They offer particular spots of color and busy groups of people, but far less opportunity to

sit or even stand. The sketch on page 11 made at Wallabout Market, Brooklyn, shows composition and detail which have all the picturesqueness of a European market place. The sketch on page . . . represents a type of picturesque shop-front of which dozens still exist in the lower city. This particular one is on Mulberry Street.

The various bridges are very picturesque, and so are the docks, coal-pockets, cranes, power plants and boats. There is nothing more "continental" than the rear of Fulton Market around the wharf where the Gloucester fishermen in yellow oilskins or blue overalls unload their cargo of fish into red baskets or green push-carts. The scene is so animated, and amusing, that it is truly difficult not to give up sketching altogether, to watch and listen. And by the way, it is a curious fact that those who gather around an artist to stand and watch, usually suppose that because he is apparently oblivious to things going on around him, he is also deaf to anything said near him, even concerning him. I have by reason of this, been treated to some rare information, both about myself, and things in general.

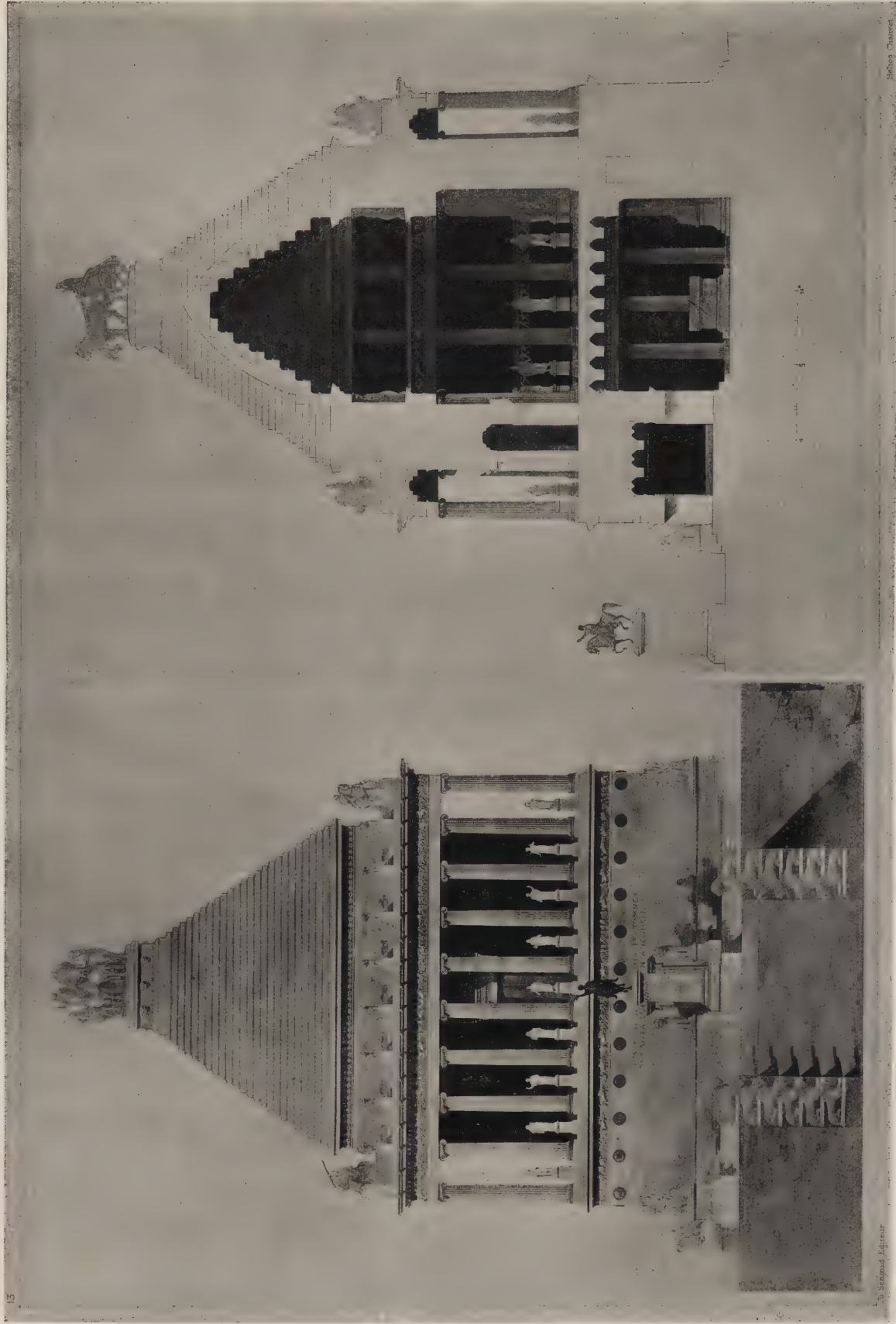
Bits of Old New York are getting fewer year by year, and are not very numerous even now. The best groups of houses are at the corner of Watts and Hudson Streets, while Canal Street in general has preserved its old character. Isolated old dwellings may be found in considerable number, but they are usually set in very ugly surroundings. They must be sketched as isolated buildings, or the framing buildings merely indicated. That of course is the artist's license, and perfectly legitimate.

For those who would rather get away from the city proper and spend their afternoon within the sight of the sea or in the park, there are good subjects along the Harlem River, especially at the old shipyard at the end of Manhattan Island, and down at the so-called "Old Mill" in East New York. The latter has a character quite as distinctive as some of the scenery near Venice. Of course Central Park and Prospect Park afford some really good tree and landscape composition, and they are not always crowded with inquisitive children. As in the matter of sketching down-town, it is simply knowing when and how to go about it. On Saturday afternoon and Sundays it is far less crowded in lower Manhattan than in most pleasure resorts adjoining the city.

And now a final word as to my exact mode of procedure. Every one ultimately works out his own theories as to pencils, paper, etc., but it is perhaps well to start with some idea as to the fitness of things.

Most of my sketches have been in black and white, and that, by no mere chance, but as a very direct result. There is after all not so much color in the average street scene as there is form and tone, and secondly—and more important—it is far easier to work in black and white. Oils or water color require more room and take more time. I have de-

(Continued on page 27)



MAUSOLEUM AT HALICARNASSUS

On the other side of this sheet is reproduced a plate that shows one of the several widely different restorations that have been made of the Mausoleum at Halicarnassus. This is at least an admirable design admirably drawn, whether or not it bears any great resemblance to the building of which it is intended as a restoration. The few fragments of the structure and descriptions of this mausoleum are all that can be used as a basis for its restoration.



TOWER OF ST. THOMAS'S CHURCH NEW YORK CITY
PENCIL DRAWING BY OTTO F. LANGMANN

The sketch shown on the other side of this page is one of the most interesting of the many excellent sketches Mr. Langmann has made about the city in his free time. It is on Japanese paper and it is remarkable for its simplicity of treatment and its sympathetic suggestion of the architectural character of the subject. An article by Mr. Langmann appears on another page of this issue.



PENCIL STUDY BY KENYON COX

The study of a head reproduced on the other side of this page is notable for the tenderness of effect, and the skill of the pencil technique. This drawing, like the other drawings by Kenyon Cox reproduced in this journal, was loaned by Mrs. Cox.



PENCIL SKETCH BY JOHN R. ROWE

On the other side of this sheet is reproduced a pencil sketch by John R. Rowe, a student at the Ecole des Beaux Arts, Paris, who has exhibited both in this country and in Paris. This sketch was exhibited in the Spring Salon, 1922, in Paris. Mr. Rowe was born in Buffalo, N. Y., and is a student in the Atelier Laloux.

THE PROCESS OF LITHOGRAPHY

BY BOLTON BROWN

WHEN it comes to writing a technical account of the details of lithography, I have to decide whether to describe first my own operations, which in some particulars vary from the usual practice and which, as a matter of fact, I seldom perform twice alike, or whether to tell first what is regularly done in the shops. I decide upon the latter, since the significance of my divergencies cannot be made clear otherwise than by using standard practice as a point of departure.

The first operation is to grain the stone. Various abrasives,—sand, ground flint, carborundums, ground glass and others—are used. Each abrasive exists in a series of grades differing in fineness, which difference in fineness enables us to produce a corresponding series of surfaces on the stone—coarser or finer—according to the demands of the work in view. The stone is placed over a tray, a little water put on it, and abrasive put into the water. The grinding is done by means of a second stone, or sometimes a cast iron disc called a levigator. This operation both removes old work and prepares the stone for new.

When ground sufficiently the stone is washed very thoroughly with clean water and set on edge to dry; when dry it is ready to work on. The fresh limestone surface is easily affected chemically, and should be touched with the hands as little and as lightly as possible.

If your picture is enclosed in a rectangle, you now lay this off on the stone and draw its boundary with lithographic crayon. Following this I often paint a coat of gum arabic over that part of the stone outside the rectangle. The object is in this way to secure this border surface from soiling during the drawing.

The next question is the design itself—the approach to which varies both according to the skill of the draftsman and the nature of the subject. Though

there are certain possibilities of erasure by regraining a spot, or washing it out with gasoline, cutting out with a knife, or even using rubber,—it would be a mistake to start out with the idea of depending upon any of them. It is far sounder practice to start with the idea that no erasure whatever is

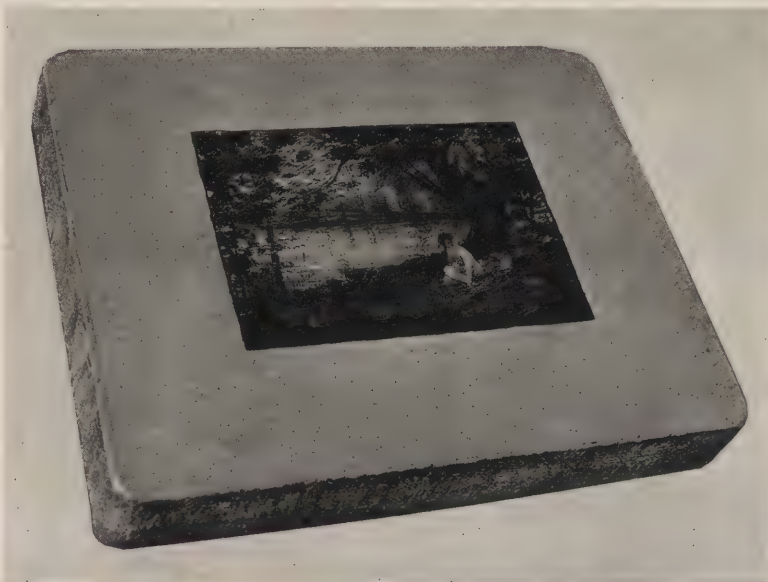
possible. In my own practice I rarely erase, having a constitutional objection to mussiness in works of art. On those occasions when matters go hopelessly wrong, I simply grain the work off the stone, and draw it over again.

To get the placing of a design, without having the construction lines show, it is practicable to begin with charcoal. This has no chemical effect on the stone, and when the masses are sufficiently indi-

cated, if you dust off the work with a clean handkerchief, enough will be left for guidance, yet not enough to deceive your eye when you begin to work with crayon. Another useful method is to transfer guide lines by rubbing the back of a tracing with dry powder—light red or something of the sort. This being laid on the stone and gone over with a tracer, the design will be found on the stone in red.

It is not well in any of these or other operations to rest the hand much on paper laid on the stone. Paper will keep the oil of the hand off the stone, it is true but the moisture of the hand will sometimes soften the size on the paper sufficiently so that, though nothing is visible, the print will show that the size did stick to the stone enough to affect the action of the lithographic crayon at that point.

It is not well to draw too fierce and fast as one may do if he chooses, with pencil and charcoal. The lithographic crayon is not like either of these, or, indeed, like anything but itself. It is a much more adhesive substance than any other drawing material. For reasons not easy to discuss in words, but which all skillful draftsmen on stone know, this



Lithographic Stone, Inked Ready for Printing.

PENCIL POINTS



Grinding a Lithographic Stone.



Inking a Lithographic Stone.

See text beginning on page 23.

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indicates and, if true lithographic effects are to be obtained, compels, a certain degree of relative deliberation in the execution.

The market is supplied with crayons called Lemerrier's, Korn's, and Currier's. All are good practical crayon and you may choose the one which suits your taste. I have drawn much with each of them and have the habit of picking out those grades from each make which my experience has led me to prefer. Lately, I have been using them very little, having invented a type of crayon of my own which I prefer to any of them.

Soft crayons yield coarser, harsher textures on a given surface than do harder ones. This is apt to surprise beginners who imagine soft work and soft crayons go together—whereas just the opposite is the case. George Bellows' recent lithographs, which are notable for the rich velvet quality of the touch, are all done with a specially hard crayon made for him by me. The natural tendency of beginners is to imagine they are still making charcoal or pencil drawings which they are not. The peculiar and peculiarly beautiful quality of crayonstone drawing is not to be obtained except on its own proper surface, with the right crayon suitably applied.

Printing is a separate craft. Ideally it ought to be done by the artist himself, and this for two reasons. In the first place the operations involved are so intimately connected with both the original drawing and the resultant print that the artist's own judgment of these is really called for. In the second place, an artist who knows, by personal experience, these operations, can and does adapt his work, in fact his very imagination, when he is conceiving his work, to them—getting thereby far better results.

However, though I sometimes teach artists to print, I cannot try to do it in the compass of this article, and will, therefore, simply give the main moves as universally practiced by the professional workmen. These moves differ in detail in different shops and in the hands of different men, but the general idea is the same. In the presence of the completed crayon drawing on stone, the printer will begin by mixing with a gum arabic solution of the consistency of linseed oil, enough nitric acid to cause a slight effervescence when applied to the stone. Experiments and experience have taught him how strong this etch ought to be in each particular case, and he varies it accordingly. Occasionally, too, different parts of the same stone call for different degrees of etching. Heavy work will stand harder etching than delicate work. You may vary the strength of the etch also, according to the number of proofs you wish to pull. The more you etch, the more you can print, but the less perfectly will the delicacy be retained. The less you etch, the less you can print but the more perfect will the print be like the original.

The etch is allowed to dry on the stone. It is well, while in this condition, to set the stone aside for a day, or several days. You then put it on the press, wash off the gum with water, and the stone being wet, roll ink on the drawing from a

leather roller. When the drawing has taken the ink perfectly, printing may begin. Or,—the usual way—turpentine may be applied and the drawing removed, but the chemical effect which these have produced on the stone suffices to enable you to re-roll it into existence again with the inky roller. I find it a good plan, following the washout and roll up, to gum the work down with gum arabic—leaving it commonly over night. The tendency is to print firmer and more reliably after this treatment. Chemical action between the fatty acids of the oil in the ink and the alkaline limestone has been going on.

When ready to be printed the stone is laid on the table of the press, the gum washed off with water, and the ink or crayon washed off with the turpentine. The second operation is performed in the presence of the water used in the first. The presence of the water on the stone is, in fact, all that makes the other wash out possible, and if by mismanagement any part of the stone gets dry and the turpentine, loaded with what it has dissolved, gets a chance to sit down directly on the stone—it may ruin it. It certainly will ruin it if any appreciable amount of time passes before it is wet again.

The stone, then, being cleaned of gum and of ink, and thoroughly sponged with clean water, is at once rolled up with printers' ink. When fully charged, a sheet of damp printing paper is laid upon the design, a sheet of some soft, dry backing paper put over it and the stiff sheet of red press board—in old times the sheet metal tympan—the back of which has been well tallowed, above this. The table is now rolled along until the scraper in the press is well past the edge of the stone but well outside the picture rectangle. The lever is thrown down which raises the table and by so doing forces the stone tight against the scraper. You seize the crank handle and turn it until the stone has been carried quite through under the scraper—stopping, however, before the edge is actually reached. You throw back the lever, which, releasing the pressure on the stone, enables you to run the table back to its original position. Having gently lifted off the greasy pressboard, you cautiously pull the printing paper from the stone. The pressure of the scraper has caused the ink to adhere to it, so that the paper now carries a reversed duplicate of what is on the stone. This is your proof.

The first one, or two, or more, often do not print quite fully, are apt to be a little pale. But this does no particular harm. Tear up these proofs, and if all arrangements are right, perfect ones will follow them.

The idea prevails in some quarters that it is possible and desirable for the printer to change the design as it exists on the stone by inking some parts different from other parts. Against this idea I oppose the statements of Hallmandel, of Thomas Way, and of myself—that this is a false notion of the function of the printer and that the true notion is that the best printer is he who most perfectly takes off on paper what the artist puts on the stone. I should have much pleasure in amplifying this

PENCIL POINTS

statement and should have no difficulty whatever in making the reason of it perfectly obvious—but space forbids.

Having thus given an outline of the actual works, I will offer a few remarks of a less narrowly technical nature.

Lithography is a word that indicates not a process of drawing but a process of printing. It means whatever is printed from a flat surface by the repulsion between oil and water.

The flat surface may belong to almost any substance—Senefelder's first lithographic prints were printed from paper. He merely developed the principle in this way, however—when he set about real work he adopted stone as his standard printing surface. This choice time has abundantly justified, and to this day, despite the wide substitution in recent times of other surfaces, nothing superior to stone has been found to print from and nothing equal to it to draw on.

For the draftsman, two kinds of lithographic prints are to be distinguished. These differ not in the way they are printed but in the way they are drawn. Work drawn on paper and then trans-

ferred to stone is called a transfer. Work drawn on stone had no special name until the word crayonstone was invented for it. The message which the writer—a painter, by profession, who has devoted a number of years to an intensive training in drawing on and printing from stone—the message he would give to all and sundry is that if they overlook the difference between transfer lithographs and crayonstone lithographs, they overlook a difference which is vital. It is a difference greater than that between oil and water color, greater than that between things as different as charcoal and lead pencil.

For thirty or forty years, some artists, both in England and in America, have now and then made drawings on paper which have been transferred and printed and given to the world as "lithographs." They are such so far as printing goes, but as drawings—which is obviously the matter of first importance—they are not. They are simply drawings on paper and this character they necessarily transmit to the print. Prints made from lithographic drawings—that is to say, drawings made on stone, have a character and beauty peculiar to crayonstone. This arises from the extraordinary qualities of the



Lithographic Press and Stone.

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surface of the stone as a thing to draw on. No one who has not drawn on a properly grained stone has yet experienced the perfect joy of the draftsman. The surface of this stone is not any one surface, but is made different, with different grades of abrasives, according to the desires of the artist. Any of these surfaces is better than corresponding grades of paper, but there is a whole world of fine grades—yielding a whole world of different types of drawings—that does not exist in paper at all.

Those who use these resources have available all the effects that the great early masters of the art had—for these masters universally used crayonstone—not transfer. Harding, Haghe, Prout, Isabey, Bonington, these masters drew on stone—and their work is truly lithography. Nothing approaching it has ever been done by any other method. Whistler, Pennell, and a few others draw on paper, and though their work is printed lithographically, it is not the same art as that of the men above mentioned—it is a paper substitute—capable of certain effects, of course, yet fundamentally different from work on stone.

The difference between crayonstone and transfer is greatest in work of a fine texture and of less and less importance as the textures grow coarser. This is nearly equivalent to saying that the smaller the work is, the more markedly does crayonstone surpass transfer, and the larger it is the nearer they come to an equality.

I make the statements I do out of a mind filled with the aims and backgrounds of the purely creative artist—the man who simply wishes to draw an original thing as a personal expression, and to give this to the world as nearly as possible just as he made it—which can be done only by lithography. But I recognize that there are numbers of applications of the art of drawing which this does not quite exactly describe—yet which might also well utilize the remarkable properties of lithography.

My friend, Charles H. Whittaker, who edits the *Journal of the American Institute of Architects*, has told me of his own keen appreciation of the potential value of this medium to architects, and an examination of the bound volumes of his magazine show many reproductions of important examples of crayonstone lithography. I am not personally in close touch with the needs of the modern architect's office and so refrain from putting up any bluff on that matter. But it does seem, even to me, that where so much time is spent making drawings—many of them careful and excellent drawings—many of them of highly important work—there must constantly be occasions where great advantage would accrue from making the drawing on stone. With a little practice the drawing itself would turn out to be better—and then there is, practically, not merely one but an indefinite number of it.

Moreover, while for the full development of all lithographic possibilities, stone is essential, I recognize perfectly that in practical work numbers of occasions constantly arise in which transfers would serve all purposes and be more convenient to make. I may add, too, that transfer lithography itself is

capable of a more complete development than it has hitherto gotten. Few of those who practice it—probably none, in fact—transfer their own work but leave it to a workman. Few of them understand, therefore, exactly what are the essentials of getting a perfect transfer—what crayons, papers, and treatments will come best. Few transfer printers are called upon to transfer artists' crayon drawings on ordinary paper—and therefore few of them can do it expertly. I mention these facts merely to show that even this secondary sort of lithography has, in my opinion, greater possibilities than we have seen realized. My own experience in transferring drawings by myself and others have convinced me of this.

SKETCHING IN AND ABOUT THE CITY.

(Continued from page 14)

veloped a way of making sketches, standing up, with my back against some wall and usually squeezed into an angle or doorway so that very few see me, and still less come to look on. I will say that although I do not like to be watched, there are none to annoy you except once in a while the little boys or girls. Of the grown ups I haven't a complaint to make; which may reassure those who are timid in bringing their talent before the public.

Of course a few will gather now and then, when you cannot hide altogether in the manner which I have described above, particularly when your sketch is nearing completion. But the people are always respectful and considerate and never make it impossible to sketch.

Usually I take a small board, about 11 in. x 15 in., and fasten a paper to it, with thumb-tacks or elastic bands. This I hold with one hand, bracing it against my body. It is of course more difficult to draw in this way, but practice will make most anything possible.

For paper I use various kinds; the Japanese heavy transparent, Cameo, or rough white, Bristol or detail paper. My practice is to carry a leather portfolio, like a brief-case, containing several kinds of paper and pencils; the subject to be sketched, or more accurately the fancy, determining which of each to use. In general, the rougher paper takes the harder pencil best, but the Japanese paper is rough, and cannot be worked except with a smooth soft crayon. Lithographic pencils, Korn's, Nos. 1, 2, 3, Conté pencils black and red, Wolff pencils, or the ordinary yellow hexagonal kind are the ones I use. An admirable pencil is Dixon's Marking Crayon, No. 804, which gives a very deep non-greasy black.

And here, by the way of a little technical advice; always start and finish your sketch with the same pencil. Do not change pencils in the middle of it any more than you would change a pen in the course of a letter, for only by using the same pencil can you register variations of touch.

(Continued on page 37)

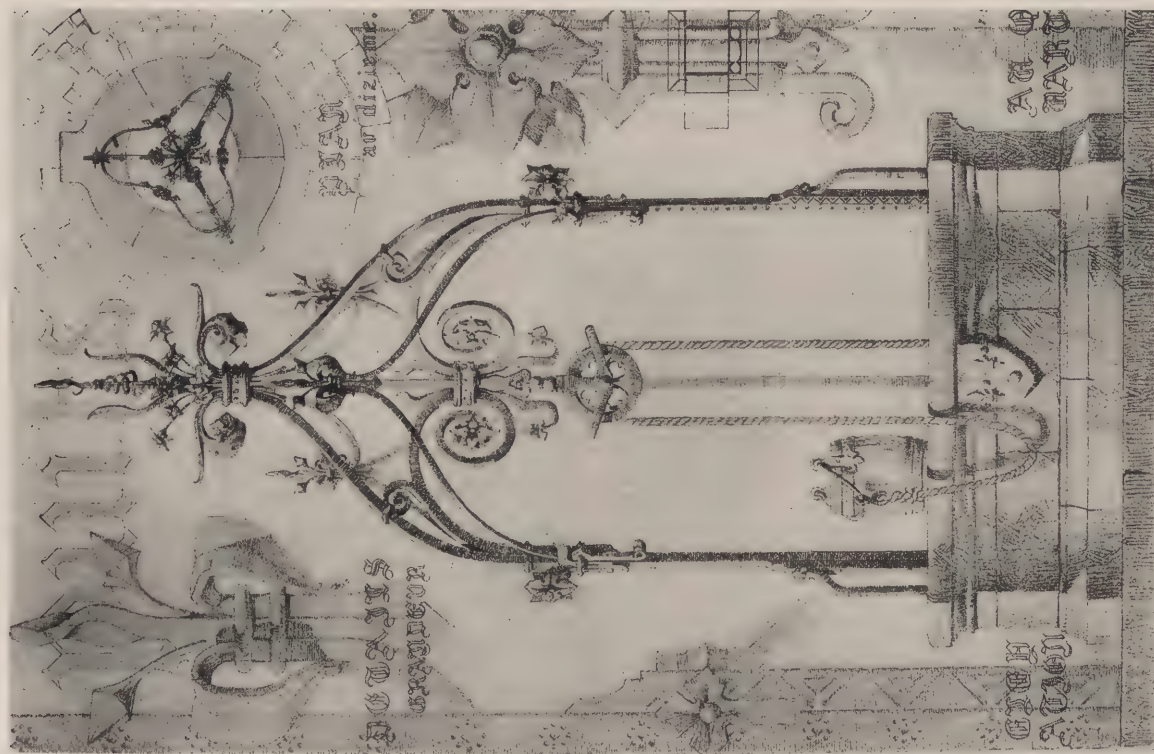


Figure 9. A Well-head with Wrought Iron Armature, by M. Chatelain, Pupil of M. Héraud, Ecole des Beaux Arts, Paris.



Figure 11. A Wrought Iron Grille, by M. F. H. Haskell, Pupil of M. Deglane, Ecole des Beaux Arts, Paris.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE
OF DESIGN

THE ARCHÆOLOGY PROJET. PART II.

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, inclusive, and the Class B Plan Problem in more recent issues.—Ed.

A MAN who does several archæos, especially if he can go to the exhibitions at the Beaux-Arts Institute rooms after the judgment and compare his work with that of others, will probably have a very clear idea of how he can best study the problem, taking into account his individual training and methods of work.

But for the man who takes his first archæo it will be of value to outline a definite method to work on, to avoid some of the usual pitfalls and especially to save valuable time.

In a plan projet much of the time is spent at the beginning of the problem in studying the parti, and until this parti is studied rather thoroughly any time spent on detail is ill-spent. As we said before, in an archæo, there is not this study of a parti, other than hunting through the documents to see what "partis" were used in the style. For the purposes of the problem one is no better than another, provided each is of the required period.

But a much greater amount of time is needed for the presentation of an archæo than for that

of a plan projet. For one thing, a perspective is frequently required or allowed in place of two elevations. When such a choice between two elevations and a perspective is allowed, it is much better to present the perspective; the psychological effect

on the jury is greater, the skill used in either case being equal, for it gives a convincing sense of the third dimension and always looks like, and actually is, more work. A perspective requires much more time to render than a geometrical drawing, more time even than two elevations; it is less conventional and the usual conventions and rules of thumb cannot be used to the same extent. As it is more realistic, naturalistic, in drawing, it must be equally so in rendering and must depend more on observation of nature for the infinite variety of effects necessary to take away the "paper look" from a rendered perspective. The gradations in value caused by receding planes, by reflected light, by local color; the effects of time and use; all are very different from the simple ef-

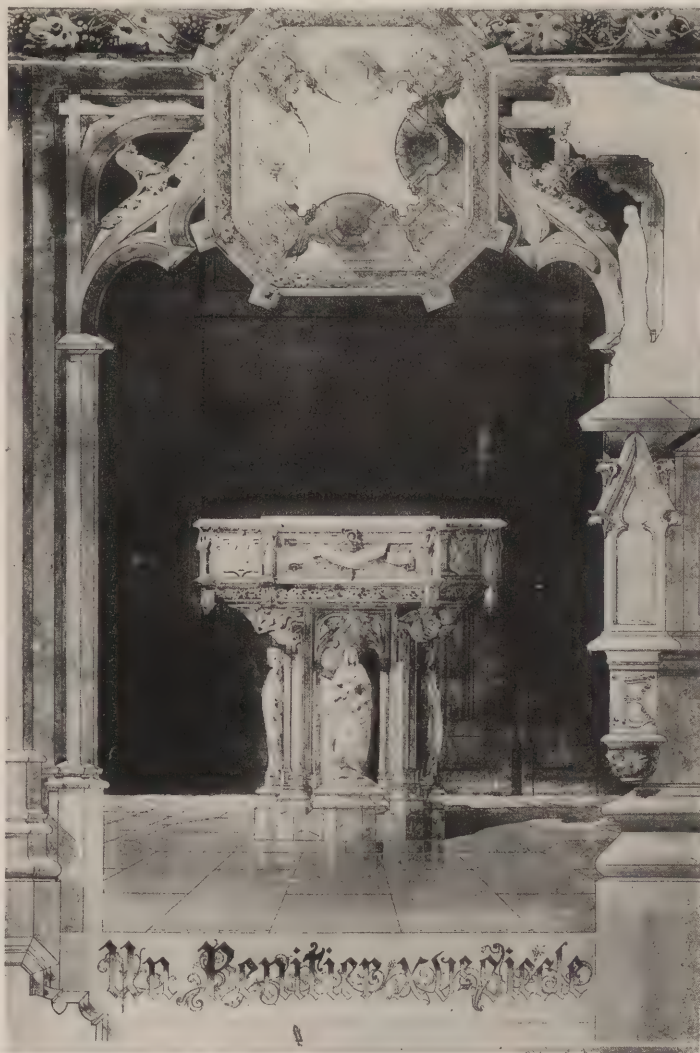


Figure 10. Holy Water Basin, St. Germain L'Auxerrois, Paris.

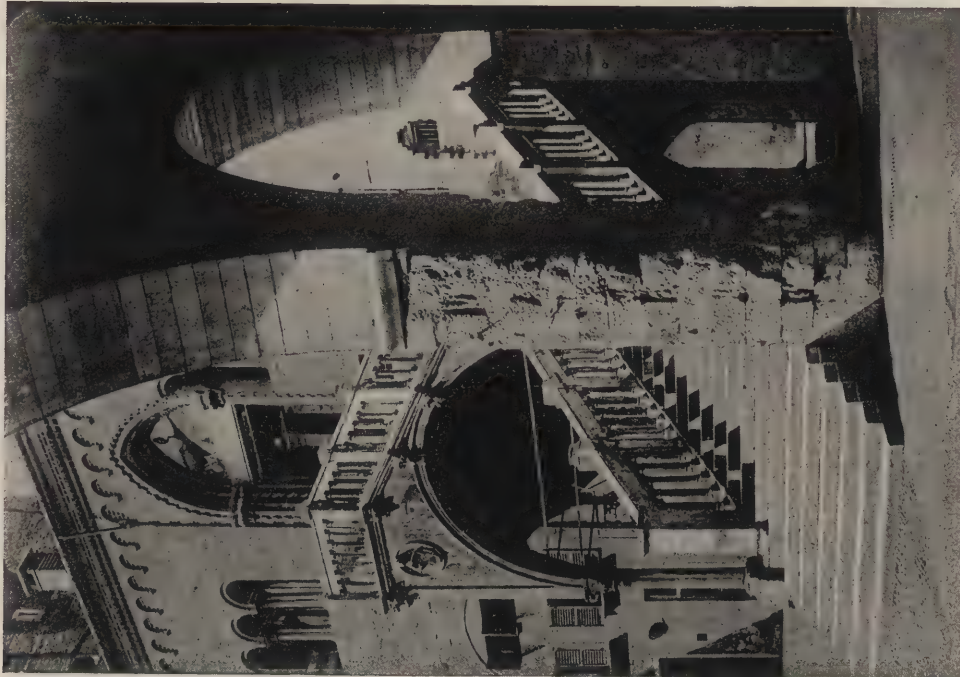


Figure 15. Stair of Old Market, Verona.

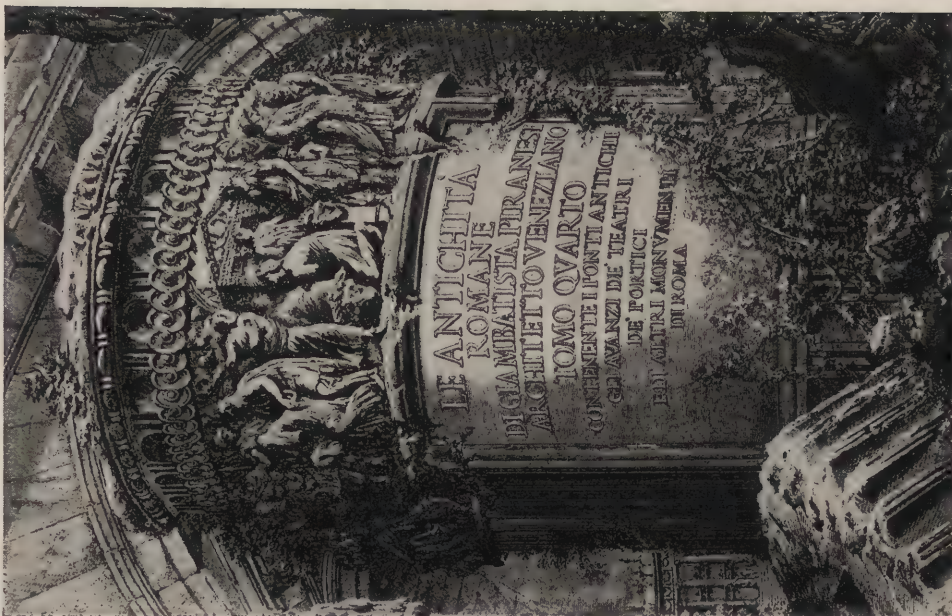


Figure 17. Fragment, Piranesi.

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Figure 16. Composition, Piranesi.



Figure 14. Reindeer Inn, Banbury.

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fects necessary to render a conventional drawing.

But even if the drawing be presented in elevation and not in perspective, there is, nevertheless, more time necessary to render the archæo than a plan projet, the detail must be brought out and atmosphere and the character of the given style imparted. Any human figures used must be in costume and must be convincingly rendered, even though this rendering be free. All this requires more time than the casting of shadows and simple modelling of a plan projet.

This leads naturally to the question of the disposition of the time at one's disposal in studying the archæo. It is hardly necessary to lay out a "schedule of time" as we did for the analytique or "B" plan problem. If we keep in mind that the presentation will require three-fourths of whatever time there is, we see that we shall have available for preliminary study only the first week or ten days. This preliminary study will include the search for and noting of, material, the deciding upon the parti and general scheme, the choosing of details to be shown and studying these and their arrangement on the sheet up to the final scale.

The first step is to look through all available documents, look at existing examples of the style if any are at hand, visit the museums to see small objects belonging to the period and look at all the books on the style that can be found, not only the architectural books but also those on the general history of the period, on its manners and

customs, its costumes, furniture and small objects of the style, at the work of contemporary painters and sculptors. You will not use all of the material so gathered but it is only in this way that you will get an insight into the time, and put yourself in harmony with the style, so that when you start work on your problem you may give it a true character. You will also have a better opportunity to make a good composition if you have a fair amount of material from which to choose. Figure 8 is part of a set of such notes made for a "Pompeïian Court," mostly taken from Menard's "La Vie Privée des Anciens."

If the problem is in the Georgian or Colonial style (as the cast iron balcony of Figure 7, February issue) it is possible for those in the east and

south to see actual examples of the style, and that is, of course, the best form of document. The books should be used at the same time to show other examples so that one may see what characteristics were common to all, what were the earmarks of the style in question, and what was peculiar to the single example.

For the Ecole at Paris, of course, existing examples are much more available, Europe and Paris itself having many centuries of architectural forms to their credit. Thus the program of a competition for a "well-head with wrought-iron armature," of which Figure 9 was a solution, mentioned as examples for study the well of Quentin Massys at Ghent, one in the Court of the Hotel, Dieu at Beaune, one in



Figure 8. Notes Made for the Study of a Pompeiian Archaeology Projet.

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the courtyard of the Museum at Troyes, one at the Musée Cluny, one at Chateau Nantes, one belonging to the Church of Notre Dame at Epure, and one at Chenonceaux, all within a radius of a few hours from Paris.

Another program called for a holy water basin in an existing church at Paris, Saint Germain L'Auxerrois, Figure 10. Even in the case of Figure 11, a wrought iron grille for a church at Salamanca, the subject of the program, and examples of the style, were no further away than New York is from Boston.

While problems are not often possible, as yet, in this country, in a style in which existing examples may be studied, it is well to remember that many of our museums contain collections of the smaller objects of a period, things that will give color and life to a problem, jewels and pottery and tomb sculpture for an Egyptian problem, Grecian urns and bronzes and figurines for a Greek or Pompeian one, ivory caskets, armor and furniture of the Middle Ages and Renaissance, etc. Figure 12 shows one such example, a group of Italian faience of the Fifteenth Century at the Metropolitan Museum. The value in going to the museum to study it instead of doing so from photographs is, of course, to note the color, surface, texture, etc. Small objects such as these not only explain the style to the student, but they make a composition more interesting.

Having, then, collected your material, you are ready to make your first studies. Lay out the elevation, or elevations, at the required scale if that be not too great to handle at the start; if that is the case, start at half the final scale. Try to put into it as much of the spirit of the called-for style as is possible. If you have noticed any peculiar arrangements in your search through the documents, especially things that would not have happened in another period, use them by preference.

Work in where you can, any interesting detail that you may have found. H. Van Buren Magonigle in his book on rendering says, when suggesting restraint in the use of many colors in a rendering, "It is the same as in design, the novice forgets that if his luck holds he will design many a building, and that it is not necessary, it is even quite distinctly undesirable, to put everything he knows about into one design. A decent reticence is to be observed in this as in all things in life—one does not go about telling all one knows—all at once." How-

ever, as the proverb has it, "There is an exception to every rule," and the archæo is the exception to this one, for it is desirable to show as well as one can, all that one knows of a given style.

As parti, proportion, disposition of motives, all come from the documents, this part of the study

will require very little time. The next step is to compose the sheet, the final presentation, as was done for the analytique, this time with freer forms. With a soft pencil make thumb-nail sketches of the composition, as in Figure 13, about three by five inches. In making these sketches try to utilize the interesting details you have made note of—utensils,

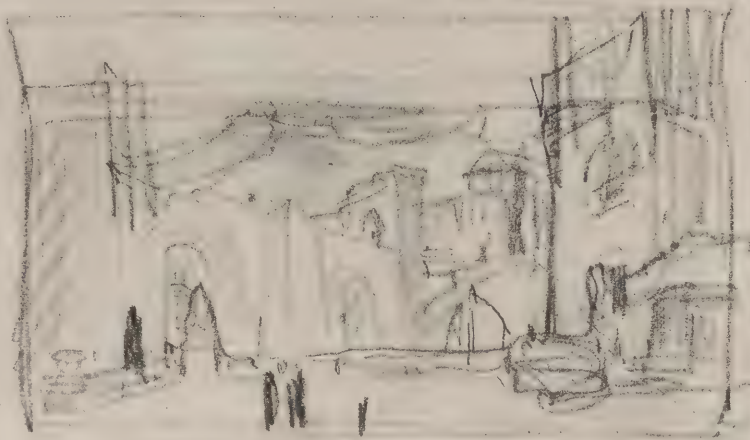


Figure 13. Thumb-nail Sketch of a Composition.

reliquaries, pieces of pottery, bronzes, and free objects, as well as actual details of the architectural fabric. Try to approximate in these small sketches the values of the future rendering, shadows where they are to be, local color where it will be an accent, for these things will be a part of the final effect and will greatly affect the composition. In studying the arrangement of the small scale drawing, if it is in perspective, it will be useful to study photographs, especially European ones, for ideas in composition. Note in Figure 14 how the sharp perspective of the buildings at the right literally "makes" the composition. Cover this portion and see how much is lost in the effect. Figure 15 shows how much interest may be added by part of the composition coming well into the foreground; such a part in a rendering would be treated simply—almost "out of focus," as would happen to similar portions of a photograph.

When you have made an arrangement at small scale that is satisfactory, it may be then laid out in charcoal directly at the final scale on a large sheet of tracing paper, or at any rate at half the final scale. In either case, block in the work in charcoal, locating the big masses of the small scale drawing, whether perspective or elevation, especially the larger shadows, and rough in the details. When this is all blocked in in this way, stand the drawing up against the wall and look at it from five or six feet away, for that is the best test of a composition of this size. You can now see if there are any portions that need to be rearranged; if the details form a pleasing silhouette; if the lines of the composition lead into the "focus" or important area.

As the charcoal is very easily wiped out with a chamois skin to a surface sufficiently clean to be again drawn on, it is possible to study the composi-

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tion on this one sheet until the massing is satisfactory when seen from five or six feet away. Until it is satisfactory in composition in this charcoal stage it is useless to pass on to the next, for the final rendering will not hide anything that is "unhappy" at this stage.

Passing to the final drawing is now a simple matter, though it will occupy, as before stated, three-fourths of the time given for the problem.

The different portions of the drawing may be drawn in pencil on separate sheets of tracing paper over the charcoal study and these rubbed on the final sheet, or the entire composition may be drawn on one sheet of tracing paper over the charcoal study and rubbed on the final sheet, or the work may be drawn directly on the final sheet, laying off the arrangements to the measurements of the charcoal study. To some extent the character of drawing on the final sheet will depend upon the technique adopted for the rendering. If it is to be pen-and-ink, for instance, and the pencil rubbed off, or in opaque water color, in which case the pencil lines will be covered up, the actual drawing will not matter much, provided it serves as an indication for the later medium.

If the rendering is to be in water color, which is transparent, or in pencil, the individual lines are important. Lines should not go further than the object they are supposed to delineate, for in a perspective the crossing or "snapping" of lines gives a very thin and "papery" effect.



Figure 12. Italian Faience, Late Fifteenth Century, Metropolitan Museum of Art.

Carry the rendering of the whole drawing on at the same time, put the early washes over each part before finishing up any one portion.

One who has worked only in water colors and used these mostly in washes, will find it interesting to finish an archæo, after the color washes are all on, with a "Wolf" pencil (2-B), an English carbon pencil that does not "shine" or reflect light rays as do graphite pencils. With this pencil it is possible to render texture for it lends itself equally to work in lines or in tones in which the actual lines are not visible, almost like charcoal, in fact. A drawing so finished should be sprayed with "fixative" before being cut from the board.

Another interesting way to finish an archæo rendered in water color washes is to take a ball-pointed pen, a "6-B pen" as Professor Arnal calls it, and render freely on top of the color, observing the usual rules of pen-and-ink, such as avoiding the cross hatching of lines, omitting lines on the lighted edges of surfaces, etc. This technique was used in Figure 3, (Feb. issue).

The rendering may often be inspired by the style of the program. A Louis XIV composition would look well with a presentation studied from Lepautre or Marot. The mention of English Tudor immediately brings to mind the drawings of Nash's mansions of England in the olden time, of one of which Figure 18 is a reproduction.

(Continued on page 37)



Figure 18. The Banqueting Room, Bramhall Hall, Cheshire, England.

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CARNEGIE INSTITUTE OF TECHNOLOGY.

THE recent election of Dr. Thomas Stockham Baker to the Presidency of Carnegie Institute of Technology at Pittsburgh calls to mind the remarkable growth of this college since its establishment twenty years ago. Founded in 1903 by Andrew Carnegie as an industrial school for young men of small means, it has since become one of the largest technological institutions in the world, rated at a high standard.

Its enrollment this year is about 4,200 students representing 26 foreign countries, and 41 states, in addition to Alaska and the District of Columbia. The faculty numbers nearly 400. Primarily it is an engineering college, but the wide range of its courses touches nearly every industry and the field of art. Its college of Fine Arts has a reputation from coast to coast for its work in arts, music, and drama, and its women's college is increasing rapidly in student enrollment yearly.

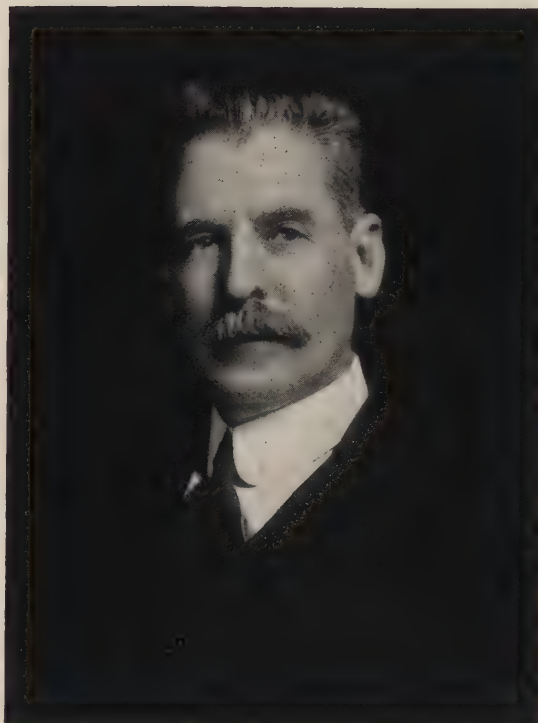
In the conduct of the engineering and the industrial courses, the institution has an unusual degree of support and co-operation from the industries in the Pittsburgh District. A great amount of research work is carried on at the college, and financed by various industrial enterprises.

Dr. Baker, who succeeds Dr. A. A. Hamerschlag, the President for nearly twenty years, has been secretary of Carnegie Tech. since March, 1919, and Acting President since June, 1922. He is widely known in the East as an educator, speaker, and contributor to literature. He was born March 23, 1871, in Aberdeen, Hartford County, Maryland, and is a graduate of Johns Hopkins University with degree of A.B. in 1891, and Ph.D. in 1895. From 1895 to 1900 he was Associate in German Language and Literature at Johns Hopkins, and from 1900 to 1908, he occupied the chair as Professor of German. In 1909, he became Director of Jacob Tome Institute, at Port Deposit, Md., where he remained for ten years, leaving to accept the Secretaryship at Carnegie Institute of Technology.

Dr. Baker is extremely popular with the faculty and students, and his election to the Presidency has been heartily endorsed at the Institute and throughout the District.

ARCHITECTURAL LEAGUE MEDALS.

MEDALS were awarded by the Architectural League of New York as follows: Architecture, Dwight James Baum; Painting, Edward Simmons; Sculpture, Edward McCartan; Landscape Architecture, Harold Hill Blossom; Craftsmanship, The Herter Looms.



LEONI W. ROBINSON.

LEONI W. ROBINSON, of New Haven, Conn., died at his home, February 12, after a short illness. Mr. Robinson was in his seventy-second year and was regarded as the dean of the architectural profession in New Haven. He was one of the first members of the American Institute of Architects, a member of the New Haven Chamber of Commerce, and of the New Haven Colony Historical Society. Mr. Robinson was one of the founders of the New Haven Architectural Club and its first president.

He was born in Jamesville, Wis., but was brought to New Haven when a child. He served with distinction as a commissioner in charge, with his associates, of the building of the state library and acted as consulting architect in improving the state capitol building. As the architect of the state commission directed by the Legislature to prepare plans for a new state prison he made a close study of prison needs and presented a scheme of development that marked a distinct advance in the designing of prisons. Mr. Robinson was the architect of many important buildings, including the First National Bank Building, in which he had his offices; the New Haven Water Company Building, the Western Union Building, the Southern New England Telephone Company Building, and many of the public schools of New Haven. Most of the Winchester buildings are his work and several of the Sargent & Co. buildings. Mr. Robinson took a leading part in the drafting of the New Haven building code.

Mr. Robinson commanded the respect of clients and friends alike for his sterling qualities, and his loss is keenly felt by many.

THE FONTAINEBLEAU SCHOOL.

HEADQUARTERS for the American Committee for the Summer School of Architecture and Painting at Fontainebleau have been opened at the National Arts Club Studios, 119 East 19th Street, New York City, where information and admission blanks may be had. An account of the formation of this school was published in the February issue.

PENCIL POINTS

SECOND ANNUAL DINNER OF THE OFFICE OF SCHWARTZ & GROSS.

THE second annual reunion of the present and former employees of the firm of Schwartz & Gross was held on Saturday, January 27, at Giotto's Restaurant, 236 West 46th Street, New York.

"The Schwartz & Gross Alumni," as it is called, came into being last year when at the opening dinner there were present about thirty men. This year the work of re-uniting the men was much simpler and at roll call fifty-one responded.

The party enjoyed an excellent Italian dinner and between courses Mr. John Weiss and two fellow artists of the Commodore Hotel Orchestra rendered selections. At intervals various men entertained with impromptu exhibitions of the art of Terpsichore, æsthetic and eccentric. Contrary to the usual practice the speeches were short and to the point.

Mr. Gross and Mr. Schwartz spoke briefly but their remarks contained thoughts well worth remembering.

Mr. Wm. H. Meyer was unanimously elected to act as chairman with power to select his fellow officers and committees and he now has nothing to do but wait until it is time to reunite the present and former employees of Schwartz & Gross for their third annual banquet.

THE SKETCH CLUB OF NEW YORK

THE Sketch Club of New York held its Nineteenth Annual Alumni Meeting and Dinner at Murray's, 228 West 42nd Street, New York City, in The Tut-Ankh-Amen Room, on March 31, 1923.

The members of the Alumni wish to extend a welcome to all old members of the Sketch Club. The eligibility to the Alumni consists of the appearance of the applicant's name on the membership records of the club from the year 1889 to 1904. All other conditions have been waived in the interest of good fellowship. Notice of meeting will be mailed to all old members on receipt of information establishing proof of former membership. All communications should be addressed to Henry C. Van Cleef, Chairman of Alumni 1923, 71 Livingston St., Brooklyn, N. Y.

PERSONALS.

CRANDALL & STROBEL, Architects, have dissolved partnership. JOHN F. STROBEL will continue the practice of architecture at 622 Ellwanger & Barry Building, 39 State Street, Rochester, N. Y.

FLOYD A. NARAMORE, A. I. A., and A. FREDERICK MENKE, A. I. A., have formed a partnership for the practice of architecture under the name of NARAMORE & MENKE, Architects, 631 Central Building, Seattle, Wash.

L. KANE and MONROE R. SANDEL, Architects, 64 West Randolph Street, Chicago, Ill., have dissolved partnership. MR. SANDEL is now associated with ARTHUR FOSTER, Room 608, 56 East Randolph Street. MR. KANE will continue at the old address.

GEORGE L. NELSON has opened an office for the practice of architecture and engineering in the Pine State Building, Portland, Maine.

GEORGE H. LEVY and BENJAMIN SCHREYER have formed a partnership under the name of Levy & Schreyer, Architects, 17 West 42nd Street, New York City.

ARCHAVER H. GARINIAN, Architect, 32, Bolbitine Street, Camp de Cesar, Alexandria, Egypt, a PENCIL POINTS reader, is doing interesting work in a far away country. One of his most recent buildings is an up-to-date fire house.

THE CHICAGO ARCHITECTURAL EXHIBITION.

THE Chicago Architectural Exhibition will be held May 1 to May 31, inclusive, at the Art Institute, under the auspices of The Chicago Architectural Club, the Illinois Chapter of the American Institute of Architects, and the Illinois Society of Architects.

A notable collection of exhibits has been arranged for but additional exhibits consisting of photographs or water color drawings of fine examples of architectural work, examples of mural painting or sculpture from any part of the country will be welcomed. All exhibits must be submitted before March 30. Entry blanks and full information can be had by addressing Clare C. Hosmer, Director of the Chicago Architectural Exhibition, 1808 Mallers Building, Chicago, Ill.

The Schwartz & Gross Alphabet.

A stands for Abie a boy about twenty,
While B is for Bowers with knowledge aplenty.
Drummers we also can place under B
C stands for Cohen, proud papa is he.
D is for Daucher, spee-are his line,
F stands for Fuchs who is always on time.
G stands for Gross, you all know this man
and also for Ginsburger, a wizard at plan
Herbert and Hermann and then Julius Naut
wind up the H's, which I must not leave out
Of Putkenhouse now you will hear tell.
He comes number twelve to fill letter L
M stands for Mueller prize clock designer
For Monrous and Meyer a real good old timer
Mc Sorley, a new man I'll introduce here.
While O is for Odenerantz our engineer
Richfield and Rubin make up the R force
And you all know that S is for Simon S.
Schwartz
Also Scacchetti and Shroder and Smith.
The last a new daddy and real proud of it
Tursotte and Tearle and Todd you will see
Come in to fill up the good letter T
Of Weinberg, I came very near losing sight
And last is our office boy William McKnight

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QUERIES

In this department PENCIL POINTS will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to The Editor, PENCIL POINTS, 19 East 24th Street, New York City.

Question—Can you tell me the name and price of a book on show-card writing? C. H. E. **Answer**—We find that there is a book on this subject published under the title "Showcard," by Atkinson, price \$5.25.

Question—Can you refer me to some book that could be used in teaching a class of young men, carpenters and masons, how to estimate? A. G. B. **Answer**—We would suggest that you examine the "New Building Estimators' Handbook," by William Arthur, if you are not already familiar with it. This book is published by The U. P. C. Book Company, New York, \$6.00, postpaid.

Question—Will you kindly give me the name of a brief history of architecture, preferably one volume, one giving the origin, styles and periods of architecture only and not dwelling too much on ornament or description of buildings? R. W. L. **Answer**—We believe that the book that will best meet your requirements is "A Handbook of Architectural Styles" by Rosengarten. This book is published by Charles Scribner's Sons, New York City.

THE STUDY OF ARCHITECTURAL DESIGN.

(Continued from page 34)

Of course, a good technique of presentation can be used as a document for any problem. The plates of Piranesi, for instance, will serve as inspiration for a severe and new structure as well as for time-worn, moss-grown pieces. Compare Figures 16 and 17, both by Piranesi. It will be seen that any scheme of rendering inspired by documents requires infinite patience and care, as well as a great amount of time. On the other hand, there is nothing that serves so well to increase one's ability in rendering and in presentation as an archaeology problem, unhampered by thoughts of parti, of arrangements of difficult corners in plan, of mosaic made up of an infinite number of lines; his attention is left free to concentrate on presentation, on the arrangement of the lines in the composition, of the masses of different value; he will learn how uncomfortable arrangements of the lines may be softened and made inconspicuous by the treatment of the tones of the masses. In fact, nothing is better as a training for a renderer than studies in these archæo projets, especially if he is fortunate enough to work under a critic who understands composition and rendering.

SKETCHING IN AND ABOUT THE CITY.

(Continued from page 27)

Again I would caution against loading up with materials and becoming conspicuous by reason of a large display of sheets of paper, a sketching stool, board or easel, and other sketching paraphernalia. Instinctively you expect more of a man in flowing tie who wields his brushes in the shade of a painter's parasol, than you do of one who looks normal and stands or sits unobtrusively in a doorway with an insignificant looking sketch block. You will note how my remarks are all directed toward that one idea, of making yourself conspicuous, the carrying out of which makes sketching possible in New York. You will start probably just as I started, with results that you would hide rather than display, and the thought that others would see, and criticize, might alone act as a deterrent. It has done just that for so many, that I stress this idea of camouflage to the utmost.

Let me say, by way of a final word of advice, that practice and perseverance are the key-notes to success,

rather than the close observance of any set of rules or any man's advice. One must sketch often to develop a style and as frequently to retain it after having once gained it. And in out-door sketching, not only in the city, but in the country as well, there are so many things that might act as deterrents, that perseverance is requisite in no small measure. But having once acquired both these necessities, the joys that come with the positive results are such as to fully compensate for all the time and effort spent in their acquisition.

THE COVER PICTURE.

ON the cover of this issue is reproduced an etching of Harlech Castle, by George C. Styles of the office of Bertram Grosvenor Goodhue. Harlech Castle is twenty-nine miles from Carnarvon in North Wales, and is built upon a rock a half mile from the sea. The present structure dates from the time of Edward I. It was here in 1460, Margaret wife of Henry VI, defeated at Northampton, took refuge.

Dafydd ap Ieuan ap Einion, held it for the Lancastrians until famine, rather than Edward IV, made him surrender. From this time is said to date the well known air. (Rhyfelgerdd Gwyr Harlech), "March of the Men of Harlech."

FÊTE CHARETTE.

THE First Annual Fête Charette of the Pen and Brush Club of the Harvard School of Architecture is announced for the evening of February 22, at the Hemenway Gymnasium, Cambridge. The feature of the occasion is to be an oriental costume ball in the style of Mediæval Constantinople, arranged by the Harvard and Tech. Schools of Architecture in collaboration. The design of the invitation is an excellent pen-and-ink drawing representing a pageant in old Constantinople.

TILE IN ARCHITECTURAL DECORATION.

THROUGH the special committee of the St. Louis Chapter of the American Institute of Architects, co-operating with the Associated Tile Manufacturers, a very interesting program was arranged for the evening of February 15, at the Hotel Statler, St. Louis.

First on the program was a private view of an exhibition of tiles and tile work. Walter L. Rathman, President of the St. Louis Chapter of the A. I. A., is scheduled to introduce the first speaker at 8:15 P. M. Rexford Newcomb, Professor of Architectural History at the University of Illinois, Urbana, Ill., is down for the principal address of the evening on "The Use of Colored Tiles in Architectural Decoration," referring especially to developments throughout the ages, illustrated with autochrome slides showing ancient and modern examples.

D. Knickerbacker Boyd, Architect, former Vice-President and Secretary of the American Institute of Architects, is scheduled to speak on "Utilization of Tiles by Architects."

Louis La Beaume, Architect and Chairman of the Committee, is down to lead the discussion on the subject of the evening, to be taken part in by members of the Chapter the St. Louis Architectural Club, students of Washington University, the public, and F. W. Walker, Secretary of the Associated Tile Manufacturers.

THE SPECIFICATION DESK

A Department for Specification Writers

The contributions printed below were received in response to the suggestion published in the January number that the papers in that issue be discussed with a view to bringing out any additional ideas bearing on the specification problem. It is hoped that all who are interested in the preparation of specifications will feel free to submit their ideas for publication in subsequent issues of PENCIL POINTS.

MECHANICAL EQUIPMENT SPECIFICATIONS AS SEEN BY A MANUFACTURER.

By Charles E. Prout.

THE article which appeared in the January issue of PENCIL POINTS by Mr. J. B. W. Gardiner entitled "Specifications from a Manufacturer's Viewpoint" was undoubtedly written, and will be interpreted as applied particularly to basic materials, rather than to patented articles of mechanical equipment.

However, many things which Mr. Gardiner says are at least equally true of mechanical units. Most everyone will agree with the statement that the manufacturer has an interest in the specification. On mechanical equipment a little thought will show that the manufacturer's interest is even greater than that of the architect, because an installation, improper for any one of several reasons, will injure the manufacturer's reputation and prevent him from doing further business not only with the architect, but with the consulting engineer (if there be one), the owner of the building, the owner's plant engineer, or other man who may have charge of the operation of such a unit. In such a case while no blame may be attached to the organization that specified the article, the manufacturer will have to go to a great deal of unnecessary expense to preserve his reputation, thus freeing the architect entirely from any criticism.

Quite naturally, the leading manufacturers know the many pitfalls to be avoided when considering an installation. The reliable companies are usually glad to give, without obligation, the benefit of their experience so that not only a well designed unit shall be installed, but also that the proper type to meet the conditions be selected.

Such a course of action requires only the selection of a manufacturer who has a reputation for being interested in making a good job as well as making a sale. There are many such concerns who will suggest the use of the cheapest units "that will fully and adequately meet a given end."

No one expects an architect or specification writer to know *everything* about *each* article contained in the construction and equipment of a building. But everyone does expect that the architect knows *where* to get such information and engineering assistance.

It is always the privilege of the specification writer to question the manufacturer's suggestions, and he should feel free to ask for all the reasons behind each suggestion. This gives an opportunity

to determine the value of what has been recommended, and to make any changes which, in his judgment, are required.

The specifications should be then written so that there will be installed exactly the material which has been chosen as the best for that job. If it has been found that there are units produced by several different factories, which are actually of the same quality, and have the same properties, it is much better to state the several units *by name* than to say "or equal."

This method gives the contractor the proper opportunity to select materials on which he can secure best delivery and opens the way to the fairest method of securing satisfactory prices and terms.

A specification written in this manner will be one of which the architect or engineer can be justly proud, and one for which he can afford to assume full responsibility, because the evidence has all been submitted to him and his judgment has passed upon each of the component parts.

In the event of unsatisfactory results from articles so selected he can always feel sure he has a reliable organization to deal with and that adjustments, if necessary, will be made on a basis of justice to all concerned.

On the other hand, the "or equal" clause, tacked behind certain products, opens the door to recommendations by the contractor. Recommendations, it can be safely said, are frequently offered for no other reason than to increase the contractor's profit at the expense of the owner or the architect, or both. There are, however, reliable contractors of long and varied experience whose fund of knowledge is available to the architect. When unforeseen difficulties arise, a frank and friendly discussion among those involved (the architect, manufacturer, contractor and owner) will usually iron them out and enable *the architect to draw a just conclusion* as to the best interests of his client. This phase of the specification applies specially to mechanical units.

It is very important to everyone concerned (Mr. Gardiner probably had this in mind but did not include it) that the architect see that the items specified are installed: and that when complaints (such as those of slow delivery, or other apparent lack of interest on the part of the manufacturer whose goods are specified) are received from anyone, the matter be taken up immediately with the manufacturer involved. Sometimes these complaints are well founded. Sometimes they are only half true, and at other times they are false.

Some mechanical units must be built to suit the conditions at each job: in other words, built to

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order. Measurements must be taken, blue-prints made, and all must be verified before actual shop construction can be begun.

When electric motors are involved it sometimes takes weeks to get a special kind of motor, and none of this work can be started until a formal order is received.

Sometimes there are cases where the best delivery that is humanly possible is three months from the date of an order, and it will be seen that unless the order is placed early a comparatively small, unfinished portion of the entire building may be the cause of withholding payments amounting to thousands of dollars.

The writer fully endorses Mr. Gardiner's statement that many specifications can be easily interpreted several ways. When the specification writer has determined upon a particular mechanical unit because he is fully convinced it is best suited for the conditions at the proposed building, his specification should be so drafted that it will be clear to everyone exactly what was meant and what material he intended should be used.

Some mechanical units are so simple in construction and in operation, that the specification writer is apt to feel that he "knows all about it." This is human, but it is dangerous. Its very simplicity may be the result of years of experimental work and study. The article may have its limitations, or what is more frequent, its applications may be wider than is supposed.

Again, a thorough understanding of a mechanical article today might be of little value next year on account of the newer developments and improvements giving a greater range of possibilities.

One particularly desirable feature that deserves attention when preparing specifications, is that of providing conditions so that additions to the building and equipment can be made at any time by the owner at a minimum expense. A few dollars spent when the building is under construction can be made to save hundreds of dollars later.

A LETTER ON SPECIFICATION WRITING

From M. Nirdlinger of Nirdlinger & Marlier,
Architects, Pittsburgh, Pa.

AS one of many who have greatly enjoyed your specification number of PENCIL POINTS, January issue, I humbly accept your open invitation to become a contributor. As an uninvited guest for a few "public speakers" minutes, I would say that if I were the judge and a prize were to be awarded for the best, or we might say, most valuable article on specification writing for a draftsman or young architect, I would certainly award the prize to Mr. William Deming, of Donn & Deming, Washington, D. C. My report of award would state that this gentleman was the only one of all the contributors that made mention of one of the most important features of specification writing, a feature that all have encountered and one which we all dread—

"Various Tricks of the Trade." This little expression is like a sign board announcing "Danger Ahead" to the tourist. There may be thousands of attractive signs along the country road, most of which are passed unnoticed, but the one reading "Danger Ahead" commands immediate attention.

Mr. Deming's "Tricks of the Trade" suggests a good riddle, What is it? It can be found in every city, on every building during construction, it is recognized by every architect when he is confronted with it, reliable builders and sub-contractors shun it. Answer—"Tricks of the Trade."

It appears to me that all the articles lack an effort to nurse the draftsman or the coming architect. They all seem to dwell on a long accepted practice, more of the arrangement of the specifications than how they should be written. I, therefore, take the liberty of suggesting that an average specification be published for a good brick and hollow tile residence. If necessary run it in serial form but in duplicate, the first copy to be as written by the architect, the second copy to be corrected as some of your well-known contributors consider proper. It might also be possible that the original specification could be published (omitting the duplicate) with corrections noted. This would clearly point out its weaknesses, pitfalls, etc., and by additions here and there its new strength would be easily recognized.

From personal experience I have found it just as important to insert cautions as to specify materials. As an illustration let us consider a specification for brick work that is laid up from outside scaffold. Unless the prohibiting of putlocks is mentioned you will find the average brick contractor will argue his right to use them. Next example would be the flashing around a vent pipe. If we adopt the principle recommended by one of your contributors to leave the various little details to the practice of the respective trades, we would specify a certain weight lead flashing around all vent and soil pipes, making same waterproof. Yet from actual practice you will not find one plumbing contractor in fifty that will carry the lead flashing up to the top of the vent and soil pipe and bend the lead flashing inside the pipe. The more economical method which is commonly practiced is to slip the lead flashing around the pipe, the top of the flashing often stopping as much as 2'-0" below the top of the vent or soil pipe. This latter method permits rain water to run down between the pipe and flashing causing trouble inside the building.

I fully appreciate that the majority of the contributors to the January issue are men far above the average architect, which enables them to obtain contractors of the highest type, but it is the draftsman and the young architect that this campaign is supposed to benefit and it is with this aim I write.

Note.—We have acted on Mr. Nirdlinger's suggestion contained in the above letter and have arranged to publish a specification with criticisms. This will appear in an early issue.—Ed.

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MISCELLANEOUS ITEMS OF CONSTRUCTION, PART XI.

By OTTO GAERTNER.

In this series of notes Mr. Otto Gaertner, A. I. A., Associate Member American Society of Civil Engineers, is treating of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Garages (Continued)—Generally the type, capacity, and number of ramps depend upon the nature of the business of the building that is to be served, because the kinds of traffic in the different buildings vary. In the ordinary type of commercial garage, a single-track ramp will serve a building having a capacity of three hundred cars, but in a large building where there is a continuous stream of two-way traffic, two single-track, one-way ramps or a two-track ramp may be needed. Single-track ramps are more desirable than double ramps.

Often two single ramps are more easily incorporated in the plan than one double-track ramp and are preferable. Upward and downward traffic can use the same single-track ramp but if the amount of traffic warrants it, the ramp can be doubled or two can be provided. It is just as important to be able to have facilities for inter-floor travel as for travel into and from any floor to the outside, and at times simultaneously.

If necessary a ramp may be temporarily used entirely for upward or downward traffic. In a truck storage garage, or one housing vehicles for distribution services, most of the traffic occurs at the beginning and at the end of the day, when all the cars leave or return to the garage within a short period of time. In such a case the temporary one-way system may be used if only a single-track ramp is provided. This also applies to commercial garages that are located in the theatre districts where the cars are left before performances and called for soon afterward.

The ramp may be made wide enough for two lines of traffic moving in opposite directions, if the space permits, but there is a saving of time because the traffic can move faster, if all the traffic on the ramp is moving in the same direction. There is also less likelihood of accidents and collisions occurring on a one-way ramp. This is especially true where the ramp is curved, enclosed by walls, or where it has a turn.

Naturally, the amount of space required by a ramp depends somewhat upon its shape, slope, location in the plan, the column spacing in the building, and the sizes of the vehicles that are to use it. Usually, the straighter the ramp the less is the amount of space needed. If the ramp is curved, or if it has a right angle turn, its width must be such as not to cause large automobiles to scrape their fenders. Sometimes the curve is made ample but at times it is made too large, thus wasting valuable car storage space. A ramp with a right angle turn, unless very wide, should have a curb to help guide the wheels around the corner in such a way that the fenders, especially on the larger cars, cannot reach to the walls. The largest cars can perhaps be kept on the ground floor. We are assuming above that the ramp is enclosed by supporting walls. The right angle turn ramp is the least desirable of any.

When possible, the ramp should start at the same point in the plan on each floor, to insure the most serviceable and economical layout without interference with structural columns on the various floors. Curved or circular ramps should not have a diameter of less than sixty feet on the inside, to accommodate the large passenger cars and trucks; but for trucks the turning radius of the largest truck that is to be accommodated must be ascertained. Some trucks can turn in sixty feet but others need eighty feet, and some need still more. But then again, the largest trucks can generally be accommodated on the ground floor.

To Be Continued.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

G. & G. Ash Removal Equipment.—Pamphlet No. 280 illustrates and describes the equipment used with the G. & G. Telescopic Hoist. Of special interest to architects will be the half size section through the G. & G. Sidewalk Door frame, showing an unusual design of a door which is watertight. Copies may be obtained by addressing Gillis & Geoghegan, 548 West Broadway, New York, N. Y.

Seamless Brass Pipe.—Bulletin No. 1. This bulletin contains typical layouts of hot water systems of various kinds, giving tables of weights, price lists and other data of value to architects and specification writers. Size $7\frac{3}{4} \times 10\frac{3}{4}$ ". 24 pp. Rome Brass & Copper Co., 105 Dominick Street, Rome, N. Y.

Hand Power Elevators and Dumb Waiters.—Dumb-waiters, elevators, invalid lifts, automobile elevators, sidewalk lifts, etc., Catalog O shows complete line of hand operated equipment for vertical conveying. Also specification data. 52 pps. size $4\frac{1}{2} \times 8$ ". Sedgwick Machine Works, 158 West 15th Street, New York, N. Y.

Sash Chains.—Catalog No. 11 covering sash and other chains used in building construction, together with a line of padlocks and a variety of other specialties. Smith & Egge Mfg. Co., Bridgeport, Conn.

Structural Slate.—A series of bulletins prepared by the Structural Service Bureau dealing with the various uses of structural slate. Also a specification, with appended suggestions for preparatory work by other contractors, necessary to receive the slate. The Structural Slate Company, 130 Robinson Avenue, Pen Argyl, Pennsylvania.

The Regulation of Temperature and Humidity.—Complete catalog, handbook and specification guide, showing in detail the entire line of Johnson Temperature Controlling Devices for all types of buildings. 64 pps. size $8\frac{1}{2} \times 11$ ". Johnson Service Co., Milwaukee, Wis.

Dampproofing.—Specification sheet covering descriptions and specifications of compounds for dampproofing interior and exterior surfaces. Size $8\frac{1}{2} \times 11$ inches. L. Sonneborn Sons, Inc., 114 Fifth Avenue, New York City.

Fireproof Veneered Doors and Trim.—A 16-page book. Size $8\frac{1}{2} \times 11$ inches. Containing full information and complete details and specifications relative to Pyrono Fireproof Veneered Doors and Trim, also Pyrono details in sheet form for tracing, are now ready for distribution by The Compound & Pyrono Door Co., St. Joseph, Mo.

Fire Doors and Hardware.—The full line of tin-clad and corrugated fire doors, complete with automatic closers, track hangers and all the latest improved equipment—approved by the Underwriters' Laboratories—manufactured by the Richard-Wilcox Mfg. Co., is shown in their new 64-page booklet, size $8\frac{1}{2} \times 11$ inches, and may be obtained by writing Richard-Wilcox Mfg. Co., Aurora, Ill.

Selling Arguments for Tin Roofing.—Standard specifications, general instructions and detail methods of application are given in an 80-page booklet, illustrated, arranged by the N. & G. Taylor Co., 300 Chestnut Street, Philadelphia, Pa. This booklet contains much interesting information, and will be sent upon request.

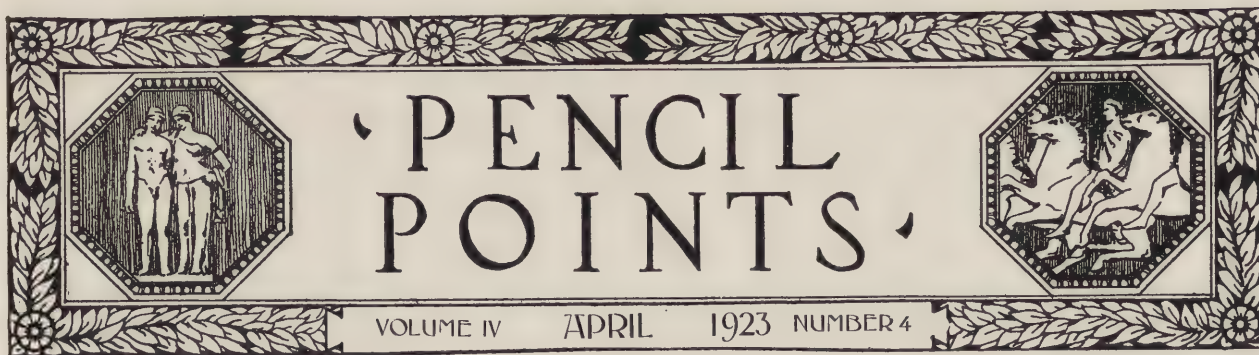
The Arrow.—Bright and newsy little publication issued every little while containing material of special interest to architects, draftsmen and specification writers. N. & G. Taylor Co., Philadelphia, Pa.

The Book of Vermont Marble.—A reference book for the architectural profession, illustrated. Sectional drawings showing details for windows and doors, cornices, parapets, terrace work, corridor treatment, wainscoting, stairs, ceilings, etc., $8\frac{1}{2} \times 11$. 70 pp., with supplementary portfolio containing 16 full page color sheets showing various varieties of Vermont Marble. Vermont Marble Co., Proctor, Vt.

Specification for Cut Indiana Limestone.—Condensed specification forms covering various classes of limestone work. Loose leaf, $8\frac{1}{2} \times 11$. Indiana Limestone Quarriesmen's Ass'n., P. O. Box 784, Bedford, Ind.

The Story of Plate Glass.—From the raw materials to its finished product is interestingly told in a booklet issued by the Plate Glass Manufacturers of America. 16 pps. Size $6\frac{1}{2} \times 9\frac{1}{2}$ ". Address 2107 First National Bank Bldg., Pittsburgh, Pa.

Fans and Heaters.—Capacity tables and dimensions engineering data, etc., describing the use of the Clarage Kalamazoo Multiple Fans and Heaters in schools, churches, hospitals and industrial plants, is fully set forth in an illustrated, 84-page catalog, size $8\frac{1}{2} \times 11$ inches and will be sent upon request by the Clarage Fan Company Kalamazoo, Michigan.



DRAFTSMANSHIP

RIGHT NOW, in view of a degree of activity in the architectural field that in all probability is only the beginning of a long busy period, it seems to us that one of the most important matters is that of getting designs properly put onto paper in the shortest possible time with the least labor and the minimum of lost motion. This calls for the improvement of drafting room practice.

Now, we believe that a great deal of benefit can be derived from an exchange of methods, ideas and experiences on this subject between architects and draftsmen through the medium of PENCIL POINTS. We, therefore, invite you to write about anything you think will be helpful along this line, and we are going to publish a number of articles on various phases of this subject.

It is a broad matter. It begins with office organization, modelling of the make up of the drafting room staff on such a plan that the work will progress smoothly, by the proper deputizing of authority and the placing of responsibility all along the line. It includes the proper filing and handling of the documents required for reference during the designing, and it includes, among other things, draftsmanship in its broadest aspect and in its special divisions as well.

We believe that it is this last matter, draftsmanship, upon which the most helpful material can be presented—the actual doing of the work. There are short, time-saving ways of doing the things that must be done in the course of the regular work of every architectural drafting room—ways that get the results. The man who knows these ways gets through the work more easily, with less worry, and does it with speed.

Then, too, there is much more pleasure in doing any work in a highly efficient way. Relief from drudgery gives one an opportunity to enjoy the work, and if the men in the drafting rooms throughout the country did not have a love for architecture and for drafting, they would not be there, they would be devoting their time to some other work. The importance of draftsmanship needs more general recognition, we feel. The work of the draftsman is one of the biggest factors in the practice of architecture. Every seemingly unimportant part of it is essential to the translation of an idea into a building.

While architectural drawing is not an end in itself, but a means to an end, pride in one's skill and the pleasure that comes with the mastery of the craft are as worthy and desirable today as they were in the days of the great draftsmen of the past. The joy in the act of drawing that many men of today feel would, if acquired by those who do not now possess it, turn what is now drudgery into pleasure. To the man who has never experienced

satisfaction from the feel of his pencil on the paper this may seem untrue, but even the right bite of the pen on the cloth in making a tracing gives a certain satisfaction to the man whose hand is trained to its work. Now, let us hear from you, just an informal letter offering a suggestion or describing a method of working.

ARCHITECTURE OR TRADE

A PROBLEM that, in one form or another, faces many men who have a love for architecture, or for one of the other fine arts, is the subject of the Harvard prize play which is now having a highly successful run at the Belmont Theatre, New York City. Quite aside from the special interest it holds for architects, draftsmen and students, it is a very clever and entertaining production, well presented.

Whether to pursue the study and practice of architecture at great sacrifice or to put aside his aspirations and take a business opportunity that will give him a competence from the start is the problem that confronts the young man in this play.

Practically the same problem faced the young man's father something over a score of years earlier. His great desire was to be a painter, but he entered the advertising department of a soap factory. He has succeeded rather well, but he is not happy. As he begins to age, the sense of loss through not having followed his natural inclination towards art expression becomes more keen and the desire to paint becomes more tormenting. How it works out, whether the son, in the light of his father's experience makes the same choice, is too long a story to tell here, and, anyway, we do not want to lessen the enjoyment of those who may go to see the play.

THE FONTAINEBLEAU SCHOOL

MANY students from all parts of the country have already enrolled for the course in architecture to be given during the summer at the Fontainebleau School of the Fine Arts. This school will be in the Palace of Fontainebleau, France, and will be conducted under the patronage of the French government. Mr. Lloyd Warren completed the arrangements for this school last summer and since his death his work has been carried on by his brother Mr. Whitney Warren. The headquarters of the American Committee for the Summer School of Architecture and Painting at Fontainebleau are in the National Arts Club Studios, 119 East 19th Street, New York City, where information and admission blanks may be had.

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*Water Color by Jules Guerin. Christ Church, Alexandria, Va.
See the Article Beginning on the Opposite Page.*

THE USE OF COLOR IN ARCHITECTURE

BY JULES GUERIN

In this article Mr. Guerin tells in a direct and informal way how he works out his schemes of color in architecture, both exterior and interior. As Director of Color for the San Francisco Exposition, he not only set a new standard in this particular for great expositions, but also awakened an appreciation of color as an element in architecture, and his interior work in the Hotel Pennsylvania, New York, his mural paintings and the Guerin prints have broadened his influence.—Ed.

MOST of the old buildings that we find so delightful would be far from pleasing if their colors were different. For instance, Christ Church at Alexandria, which is the subject of the drawing reproduced on the opposite page, owes much of its charm to its coloring. The bricks of which it is built were made from a clay that during the process of burning takes on a delicate pink bloom, lending a tenderness quite in keeping with the refinement of Colonial detail. With this color the creamy white paint of the wooden portions harmonizes admirably. Imagine this building made from the kind of bricks that have a hard blackish glaze, or imagine the woodwork painted any other color than white, toning towards cream or buff, and it will be quite apparent that no other coloring would have been right.

An example of unfortunate color is St. Paul's Chapel in New York. The exterior woodwork, which should have been of white shading toward buff or ivory, is, instead, a dirty drab. Not far from this chapel is the old New York City Hall which is very lovely in the soft tones of its marble walls and we have reason to be glad that the proposal to have the exterior of this building cleaned by sand blasting some few years ago was defeated. If this exterior had been cleaned, its color would have been an unpleasant, staring white for a time, then, since the old surface had been removed, the marble would have caught the dirt easily, and under present-day conditions instead of ever regaining its beautiful color it would undoubtedly have blackened.

An inspiring example is the care exercised by the architects in the matter of color and texture in the additions to the White House, made some few years ago by the firm of McKim, Mead & White. Although the fact is not generally known, the White House was originally brown in color, having been built from a brown sandstone obtained at a quarry in Virginia. When the White House was burned by the British during their occupation of Washington the flames leaping from the windows chipped the stone. It seems to have been considered more economical to paint the building rather than to restore it. So the Executive Mansion became the White House; a brown sandstone building painted white. When the firm of McKim, Mead & White undertook the work of building the extensions along the lines of those comprised in the original design of the building they realized that it would be necessary to build the additions of the same material as the original building if the same texture were to be obtained, and texture influences

the apparent color of a surface. Therefore, stone from the same quarry was used and then painted white.

A key to the solution of the problem of designing the color scheme for a building or a group of buildings can often be found in the colors of the landscape which is to form the setting, and the landscape setting must be taken into consideration in any case. In designing the color scheme for the San Francisco Exposition, I regarded the exposition as a great painting on a canvas three miles long; in the foreground yellow sand, in the middle distance the exposition stretching from right to left across the picture, the buildings lined against the ultramarine sea, and in the distance the hills of Marin County across the water.

As a basis for the color scheme I chose a tawny buff color and this was the color in which all of the stucco was made and the cast parts moulded. Upon this basis were added the other colors—reds, greens, yellows and gold—all toned in to harmonize. I used to get up on a hill a half mile back and look at my picture to see whether there was anything wrong, just as one would do with any painting on a canvas. If, for instance, a dome that was green did not look right I would have to change it to some other color, say, gold, in order to complement something in the distance.

One of the colors which I introduced was the green of growing vines; thousands and thousands of vines were planted and kept in readiness. When the work of painting a building had been finished the landscape gardener came along and set these vines in the ground and trained them to grow up the walls. My idea in this was to tie the buildings to the ground so that there would not be a harsh line of demarcation between the buildings and the grass. The vines spread over the walls and in a week became part of the scheme.

As I said before, I started by adopting a tawny color as the basis for my color scheme of the exposition, toning the whole thing, as a painter will tone a canvas. In addition to giving a good basic tone for my color scheme this did away with the white which would have been very disagreeable to visitors to the exposition on account of the great strength of the California sunlight. No smoked glasses were needed by the visitors; even the roads were brought into the picture by being topped with a tawny colored sand of about the color of travertine, but somewhat darker in tone than the buildings. If the exposition had been built of white staff no one could have looked at it. In order to demon-

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strate this fact I had an area of wall 65 ft. x 100 ft. on the back of the Manufacturers' Building plastered with pure white stucco of the same color and texture as the staff which formerly had been used in expositions; the result was positively blinding, and my use of tons of ochre was justified on practical as well as artistic grounds.

The colors were all reduced with white, and those at great heights were stronger than those lower down in order that they might "carry." The whole exposition had an oriental effect in the play of color as well as in the character of its domes.

I have a great disbelief in white. For instance, on the canvas upon which I am now working in my atelier, a decoration two hundred and twenty-four feet long, the basic color is about the color of the marble of the architecture in which the decoration will be placed, and it is a long way from white—a tender, warm, buff, gray. In my opinion white or black should not be used in any painting because immediately you introduce them you ex-



*Dining Room in the Hotel Pennsylvania, New York City.
McKim, Mead & White, Architects.*

will appear to be white, that is, there are flags in which white is one of the colors. How far it is from white may readily be seen by holding a piece of white paper along side the "white" in my canvas, for it is a rather light tint of buff. Still, when it is mounted in place in juxtaposition with the color of the marble and with the other colors of the decoration there will be no question that this was intended for white.

I spoiled a lot of perfectly good painters during the work on the exposition for I destroyed their ideal of what constituted good workmanship and taught them to apply color to the travertine surface of the stucco without carrying the color into the

(Continued on page 43)

haust your black and white values. Paint in red, blue, yellow should be handled in the same way that a general handles his army, one should not exhaust color resources, but should always have a reserve force, as a good general always has.

In this decoration upon which I am now working there is what



Detail of Ceiling of Dining Room in The Hotel Pennsylvania, New York City.

ZONING AND THE ENVELOPE OF THE BUILDING

BY HARVEY W. CORBETT

THE provision in the zoning law which calls for the stepping back of buildings, has forced the designer to approach his problem from a new angle in every case where this provision applies. Before this law went into effect the architect was accustomed to taking into account the required floor space, the character of the building desired, characteristics of the piece of property upon which the building was to be erected, the limit of cost, practical requirements of plan, etc., and then he would begin work upon the plan arrangement. Following this, he would make a study in section for the story heights, number of stories, etc., clothing this general scheme in elevations which would give his architectural fancy such opportunity to display itself as the available funds and the owner would permit. Once you conceded fire-proof construction there were almost no mandatory limitations; the area of the property, the cost and structural limitations as to height were the main factors to be taken into consideration. There were few restrictions as to the form the building should take, but for economic reasons it usually took the form of a packing box.

Now the moment the zoning law appeared, owners and architects in general realized that here were restrictions, here were new limitations to what they could do. At first glance it did not appear just how these restrictions would operate to change the form of the building, but it was evident that the space from the property line up was no longer free—the law cut into it.

It became clear that it would not be logical for the architect to proceed as he had done in the past, starting with the plan, then passing to the sections and elevations, only to find himself in conflict with these restrictions and forced to start all over again. Furthermore, the moment the law put these

restrictions on the use of property, the reaction of the owners in general was to want the most they could get under the law. As a result, the owner not infrequently comes to the architect with the intention of getting all the law allows him. He may say to the architect even before he tells him the purpose the building is to be used for, "How much bulk of building can I get?" If the owner had asked such a question before this law came into effect the architect would probably have answered him by asking another question, "How much money have you?" Now owners realize that the law has placed certain restrictions on building that limit and determine the maximum bulk. The architect may be presented with this problem even before he knows what kind of building he is to design or the purpose it is to serve. He may have to start his problem by working out the form or the peculiar mass to which the law will limit the building on a certain piece of property or, as we are pleased to call it, "the envelope of the building."

For the purpose of illustrating this method of procedure a set of

four drawings, showing the envelope of the building for a full city block under the zoning law, together with the progressive steps in the development of a building within this envelope, is shown in connection with this article. These four drawings were developed by Helmle & Corbett, and prepared under their direction by Mr. Hugh Ferriss. In Figure 1 is seen the envelope representing the maximum bulk and its form under the zoning law. So soon as one starts to design a building within this envelope one is confronted by the fact that a building, no matter for what purpose, must be provided with light. To conform to the fact that daylight does not penetrate in sufficient intensity for practical use more than two or three times the floor



Figure 5. Final Stage, a Possible Development Within the Envelope.

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Figure 1.



Figure 2.

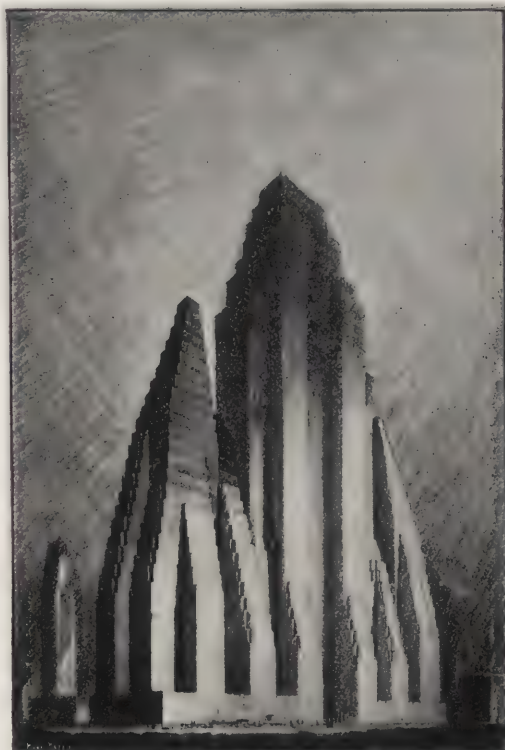


Figure 3.



Figure 4.

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A Study of the New York Zoning Law. Drawing by Hugh Ferriss.

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height, the architect must provide either an interior or an exterior court. If he uses an interior court he takes the very heart out of his possible building for the slope of the step backs applies on the court side as well as on the street side, but to a greater extent. So it becomes necessary to cut the court from the outside, as one does not want to lose the advantage of indefinite height over 25 per cent. of the lot area which is allowed by the zoning law. The best advantage can be taken of this area by cutting the courts from outside instead of inside. This gives the shape shown in Figure 2.

Having arrived at the envelope represented in Figure 2 we find that it is a shape of rather unusual characteristics; vertical part of the distance, sloping the rest of the way, and with a tower which would be the ideal of Biblical days, actually reaching to the heavens, a veritable Tower of Babel. For practical reasons we begin to straighten up these sloping walls and for structural reasons we cut off the tower at a height that is possible. Having done this we find that we have the form shown in Figure 3.

Figure 3 is structurally very impracticable; step backs every two stories are not good and the area in a point like the one at the left would not be worth while, for the space would cost more than the owner could get for it. We therefore make our step backs at those points where a proper balance between the available floor area and economical construction meet. Of course, there is actually more space in Figure 3 than in Figure 4, but the cost of the additional space would make it not worth building.

We have in Figure 4 the possible structural bulk which can be lighted by daylight and that contains all the floor space worth enclosing. With this as the basis of our problem we may proceed to fit into it the requirements of the particular building we are to design. So it is apparent that our method of approach is practically reversed and we start where, in the old days we were not supposed to start (but often did start), with the facade first and the plan afterward.

Figure 5 shows Figure 4 architecturally "trimmed" and it happens that we have chosen a solution along modernized classic lines. An equally interesting solution might be had with Gothic inspiration, or, if one chose, one might leave the whole thing untouched, depending for effect entirely upon the pleasure to be derived from contemplating the masses of these forms. The design shown in Figure 5 represents merely the last stage in the development of the problem of getting all the law allows under the zoning law on an entire New York City block and it is not presented as a design for a proposed building.

On page 17 is shown a drawing in which Mr. Hugh Ferriss has presented the four stages of development within the envelope. The first and second stages are represented in the distance, a portion of the third development is shown in the foreground, while in the centre is seen the development of the building in its fourth stage. With the

simple addition of window openings, the masses shown in the fourth stage, devoid of all architectural trimmings, stand forth in a way to emphasize the dominating characteristics of the form of a building under the set back provision of the zoning law.

THE AMERICAN ACADEMY IN ROME.

FROM a letter recently received by C. Grant LaFarge, Secretary of The American Academy in Rome from Gorham P. Stevens, Director, we quote the following:

"Prof. Frank delivered the opening lecture at the first meeting of the British and American Archaeological Society. Subject, *The Foundation of Rome*. This lecture is always quite an affair. Senator Lanciani was present, Dr. Ashby, Mrs. Strong, and many other archaeologists. The Chancellor of our Embassy presided. Prof. Frank's lecture was well received.

"Prof. Henry A. Sanders, a former Director of the Classical School, has been in town looking up palaeographical material in connection with certain new portions of the Bible which have come to light recently. Prof. Frank induced him to give us a talk about his work, which was tremendously interesting.

"Prof. Guido Calza, Director of the Excavations at Ostia, has delivered the first of our Italian lectures. Subject, *The Commercial Policy of Rome*.

"Active preparations are in progress for the Greek trip, which is scheduled for the month of April. As there is a good deal of smallpox and typhoid in Greece due to the refugees from Asia Minor, Constantinople and Thrace, we are requiring everyone to be inoculated against these diseases. There will probably be between twenty and thirty in the party, and both Prof. Frank and Prof. Van Buren are going. Mrs. Stevens has a small class in modern Greek.

"We are already beginning to plan for our Spring exhibition and concert. We hope to hire an awning to go over the courtyard and to give the concert there: perhaps the orchestra will be as large as sixty pieces, if Mr. Lamond can find the money for it. We hope to have Their Majesties present, and Mr. and Mrs. Mead to receive them.

"The Ward-Thrasher Memorial is advancing. The upper portion is to be a fresco, and the lower an inscription and marble seat. Mr. Faulkner has his cartoon at full size, and the wall has been prepared for actual work.

"Mrs. Jordan, for many years Dean of the women students at Ann Arbor, has shown great interest in providing more ample living quarters for our women students. I have been over the question both with her and with Mr. Mead, and certain urgent recommendations have been sent to your Board.

"Mr. Charles Graham of 107 Via Torino, Rome, has presented the Academy with four beautiful suits of Japanese armor and twenty-three fine Jap-

(Continued on page 43)



DETAIL OF MAUSOLEUM AT HALICARNASSUS
FROM D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

On the other side of this sheet is shown a detail of the restoration of the Temple at Halicarnassus which was presented in the March issue. This is an interesting restoration and an admirable example of rendering.



2/30 Castor & Pollux Rome

G. C. Styles 1922

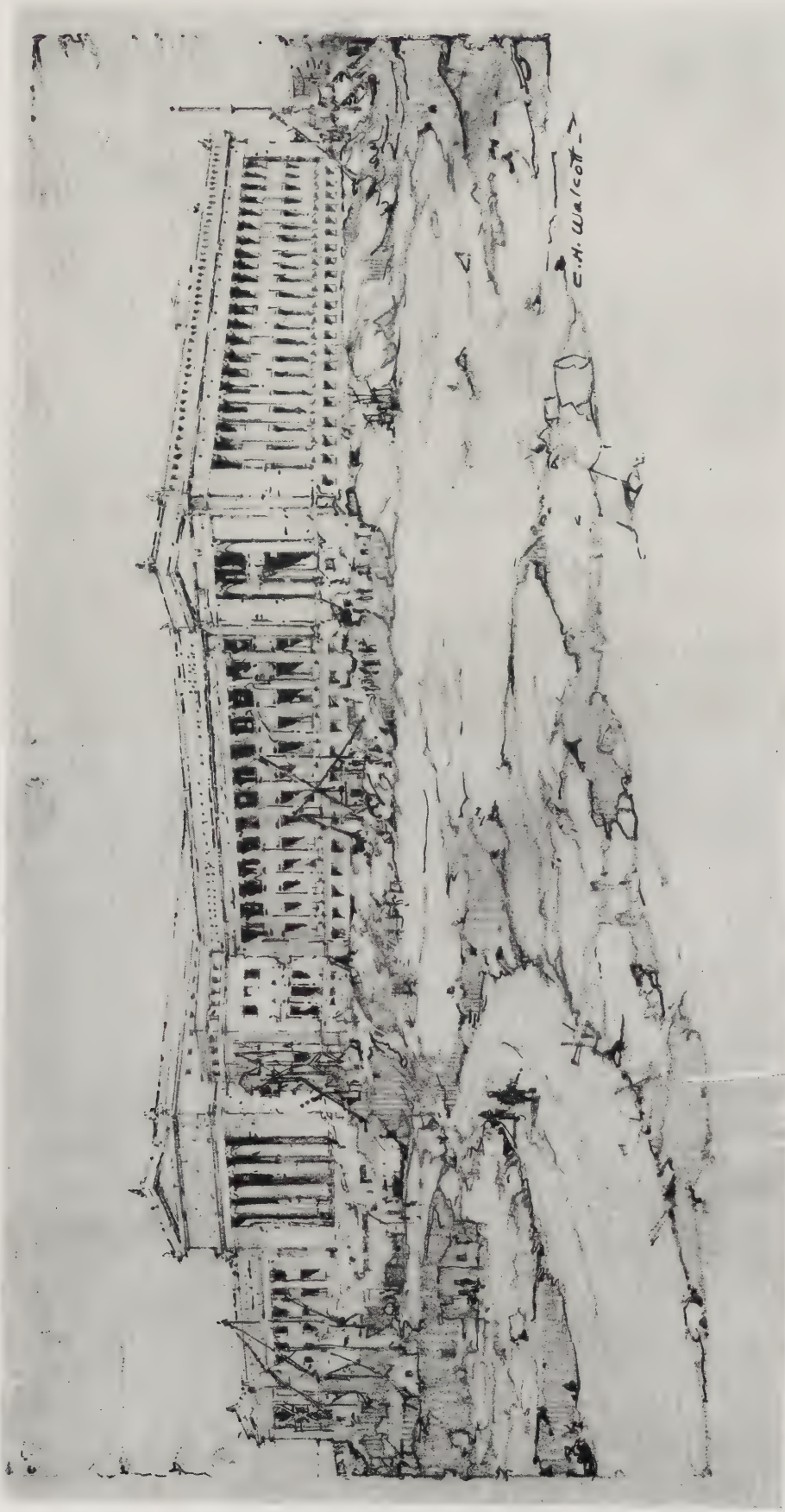
TEMPLE OF CASTOR AND POLLUX, ROME
ETCHING BY G. C. STYLES

An especially good etching of an architectural subject is the one reproduced on the other side of this sheet. Mr. Styles is a member of the staff of Bertram Grosvenor Goodhue. Another of Mr. Styles's etchings was reproduced on the cover of the March issue of this journal.

PENCIL POINTS

VOL. IV, No. 4

PLATE XV



THE FIELD MUSEUM, CHICAGO, SKETCH BY CHESTER H. WALCOTT

The sketch of the Field Museum, Chicago, reproduced on the other side of this page shows a very effective use of pencil and pen-and-ink in combination. Mr. Walcott has done many interesting sketches and other examples of his work will be presented in early issues.



PENCIL STUDIES BY KENYON COX

Children are generally recognized as difficult subjects for the draftsman to represent successfully and this fact lends additional value to the two studies in pencil by Kenyon Cox, shown on the opposite side of this sheet. This drawing, like the others by this artist shown in this journal during the past few months, is reproduced here through the courtesy of Mrs. Cox.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE
OF DESIGN

THE MEASURED DRAWING

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, the Class B Plan Problem and the Archaeology Problem in later issues.—Ed.

SINCE the beginning of the Renaissance in Italy, when Brunelleschi, Bramante, and the others down to Michael Angelo made drawings of the classic remains in Rome, the "measured drawing" has had a fascination for the real "student" of architecture. Many measured drawings have been made primarily for publication as records for the use of designers. All our familiar "documents" are measured drawings. Letarouilly's, "Edifices de Rome Moderne," Cesar Daly's "Motifs Historiques," Pfnor, Garner and Stratton, and all the other well known names, including the many volumes of Piranesi's engravings of classic and Renaissance Rome, are compilations of such measured drawings. From time to time later investigators checked up and revised some of these measurements. A recent Fellow in architecture of the American Academy in Rome found such an error in the plan of the Villa Gamberaia as laid out by Percier and Fontaine. When measurements are undertaken for publication purposes and a large field must be covered, as is frequently the case, it is assumed that two sides of a form are alike, and a more careful measurement may

show a distinct variation (as in this case).

A measured drawing is required by the Beaux-Arts Institute course and by the Ecole des Beaux-Arts in Paris also, not as reference material, but because it is an excellent training in the study of profiles and of execution, of ornament, of surface textures. It is a connecting link between design, creation and execution, and it is by executed work that architectural ability is finally judged, not by drawings. Indeed, when the most clever men at the Ecole have won the "Prix de Rome"—have reached

the apex of student achievement, they are sent to Rome to make "measured drawings" of the architecture of past ages. It is these measured drawings that were published in the work and that we are accustomed to speak of as "D'Espouy." Of this work many examples have been given here, all of them of the classic school. The Grand Prix men study fragments of other work, of the French and Italian Renaissance for instance, and of the middle ages: Figures 1 and 2 are examples of Italian Renaissance Work. Figure 1 is of a very beautiful piece of architectural sculpture, and is in itself a beautiful piece of work—note the ability



Figure 5. Fountain, Piazza San Pietro, Rome. Drawn by William J. Hough, Courtesy American Academy in Rome.



Figure 1. Tomb in the Church of S. Domenico, Bologna. Drawn by M. Chedanne.
From D'Espouy's "Fragments D'Architecture de la Renaissance."

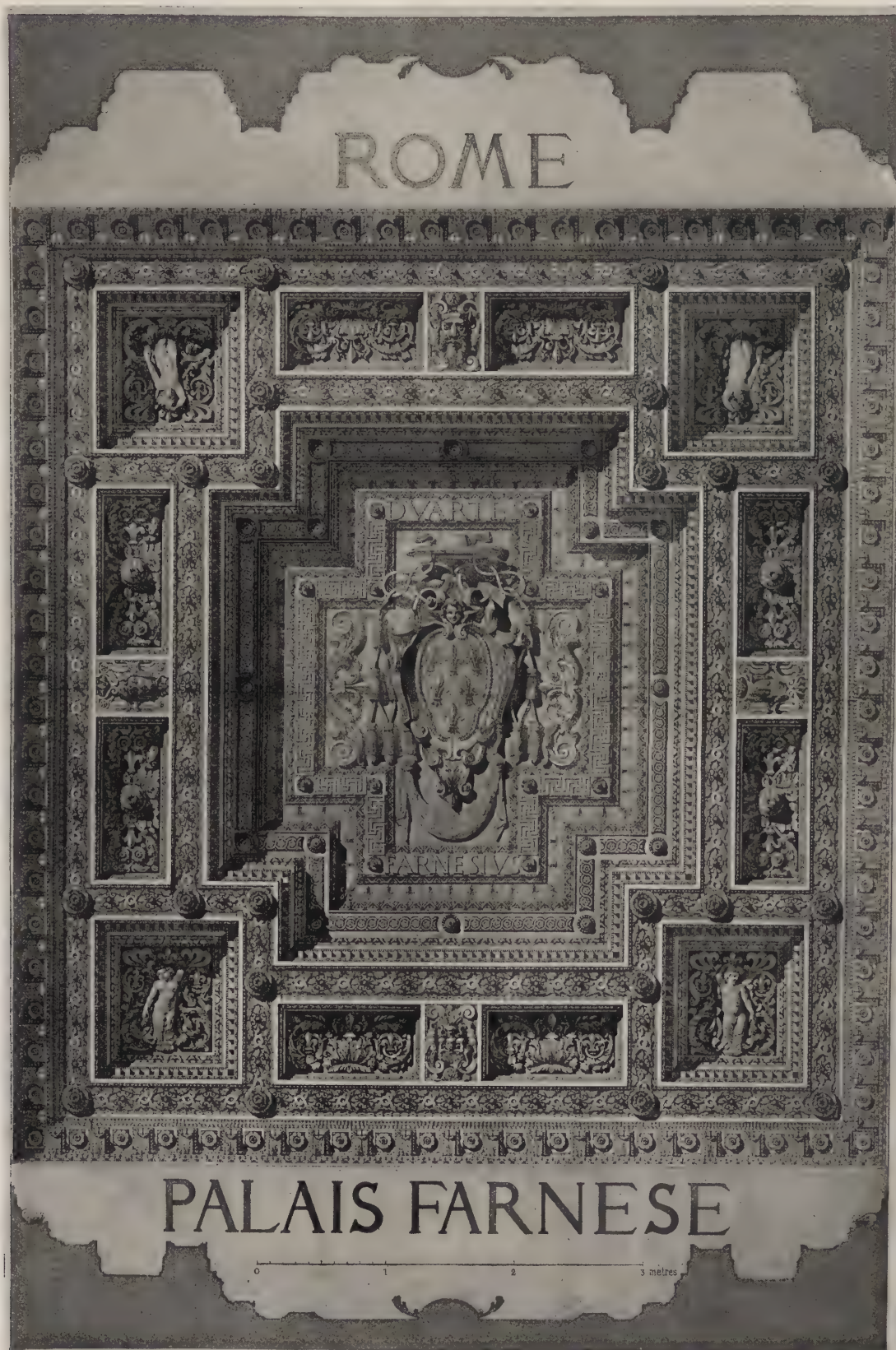


Figure 2. Ceiling in Farnese Palace, Rome. Drawn by Victor Laloux.
From D'Espouy's "Fragments D'Architecture de la Renaissance."

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*Figure 3. Doorway, Lycée de Lyon.
Drawn by Paul P. Cret.*

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with which the sculptural forms are modelled, and all the conventional system of shadows and washes—the careful picking out of high light, half tone and shadows.

Figure 2 is quite different—a flat ceiling in the Farnese Palace at Rome by the late Victor Laloux, who was later “Patron” of one of the well known ateliers at the Ecole des Beaux Arts;—it is simpler in rendering, but very complicated in drawing. It is again a masterpiece of presentation.

A measured drawing is required also at the Ecole. One such, by Paul Cret, the doorway of the Lycée de Lyon, is shown in Figure 3. Note again the careful rendering—especially the modelling of the sculptural forms by the skillful division into high-light, half-tone and shadow, and the rendering within the shadows by the use of reflected light and back shadows. Note how the planes take their place forward or backward, simply by the value of the wash or tone. Here, as in most of the D’Espouy plates, the mouldings are rendered by dividing these mouldings by a series of parallel lines, and rendering by washes of graduated tones as explained in the chapter on rendering the “Analytique” (Sept. 1921 PENCIL POINTS). In this instance the lines are fairly close together and the washes are very carefully put in so that the lines disappear in the reproduction at a reduced scale.

The men at our own Academy in Rome now make measured drawings in the same way. The Ponte Rotto, Figure 4, by Wm. J. Hough, fellow 1914-1917, was a bridge built by Pope Gregory XIII in

the Sixteenth Century. The presentation is inspired by the engravings of the time of Piranesi. The fountain of the Piazza San Pietro, Figure 5, by the same author, shows a very clever representation of water. Unfortunately a black and white reproduction does not show the variations in color of such a rendering: the student should look for drawings of this character at the architectural exhibitions and study the use made of color in modelling, and note changes in local color due to shadow, reflected light, etc.

A student from this country is fortunate when he has the opportunity to take measurements abroad for his measured drawings. There is such a profusion of usable material there that our own younger country seems bare indeed. Perhaps one of the best measured drawings made in this country was that made by Douglas D. Ellington (later winner of the Paris prize in 1912) from measurements made on a European trip in 1910 (Figure 6). This is not only a good measured drawing—it is a masterpiece in presentation. The technique is an “archeo” in itself, studied as it was from Piranesi’s engravings of Roman fragments, though Ellington first made a modelling by a series of light washes of a bluish gray water color.

One seeing the crisp lines of the presentation is apt to forget that a number of studies must be made before hand, not only of the composition of the sheet and the arrangement of tone values, but also of the modelling of the different fragments. In this case such studies were made first in charcoal



Figure 4. Ponte Rotto, Rome. Drawn by Wm. J. Hough. Reproduced Through the Courtesy of The American Academy in Rome.



Figure 9. Pulpit in Old Swedes Church, Philadelphia.
 Drawn by Lawrence C. Licht.



*Figure 7. Entrance, Wakeling House, Frankford.
Drawn by Bradford Tazewell.*

PENCIL POINTS

and then with a 6-B pencil, which approximated the pen-and-ink technique to be later followed. A reproduction can hardly do justice to this technique—the drawing was made on an antiquarian sheet and considerable is lost in reduction.

But it is possible to find many interesting subjects in this country, new as it is compared to Europe. We have, of course, much Colonial work in the East

and South, which furnishes both exteriors such as the Portico of the Wakeling House, Frankford, Figure 7, and interiors as the panelling of the State Parlor of Stenton, Germantown,—the home of William Penn's first Lieutenant Governor, Figure 8, and the pulpit of Old Swede's Church, Philadelphia, Figure 9.

Some work of the classic revival—the period about 1830—is available for material, including some very interesting tomb monuments. In the West and in Florida there is some architecture of very early date—the old Spanish Mission Churches. There are also some exotic things in this country: in museums, such as the Metropolitan in New York, will be found a complete Egyptian Tomb—a Turkish doorway, and complete rooms from the Tyrol, the Low Countries, etc.

The other large museums of the country have similar available objects. In Philadelphia there is in Fairmount Park a Japanese Temple Gate and a Hindu Temple; in the University Museum an Aztec Wall—and so on. If one is sufficiently interested, a subject can easily be found.

Having chosen the subject it is well to remember that measurements are useless unless they are complete. Everything must be measured, and accurately, otherwise such work is a waste of time.



Figure 8. State Parlor, Stenton, Germantown, Pa.
Drawn by Gerald K. Geerlings.

the same profile at several different points on the moulding to allow for inequalities in execution.

For ornament or sculpture, studies should be made in charcoal and measurements taken of important points, very much as sculpture is "pointed" up to a larger scale.

Photographs are of great use and as many as possible should be taken of the subject in every direction—especially if it is in a foreign country or in an inaccessible place, so that there will be a chance to check up on any errors or omissions. Photographs are very helpful in rendering, they

show the "modelling" of surfaces in a very convincing way. Figure 10 shows a photograph taken for such a purpose, with the shadows at almost the conventional angle though the source of light is at the right instead of the left as usually.

Indeed at the Villa Medici when the men who have won the Grand Prix de Rome are making the careful renderings we are familiar with as "D'Espouy" plates, they take a cast of a cap, for instance, out into the garden, turn it until the sun is in the proper direction for the conventional architectural rendering, and then mark—directly on the cast—the trace of the shadows on the object.

As such a great amount of time is given
(Contin. on p. 50)



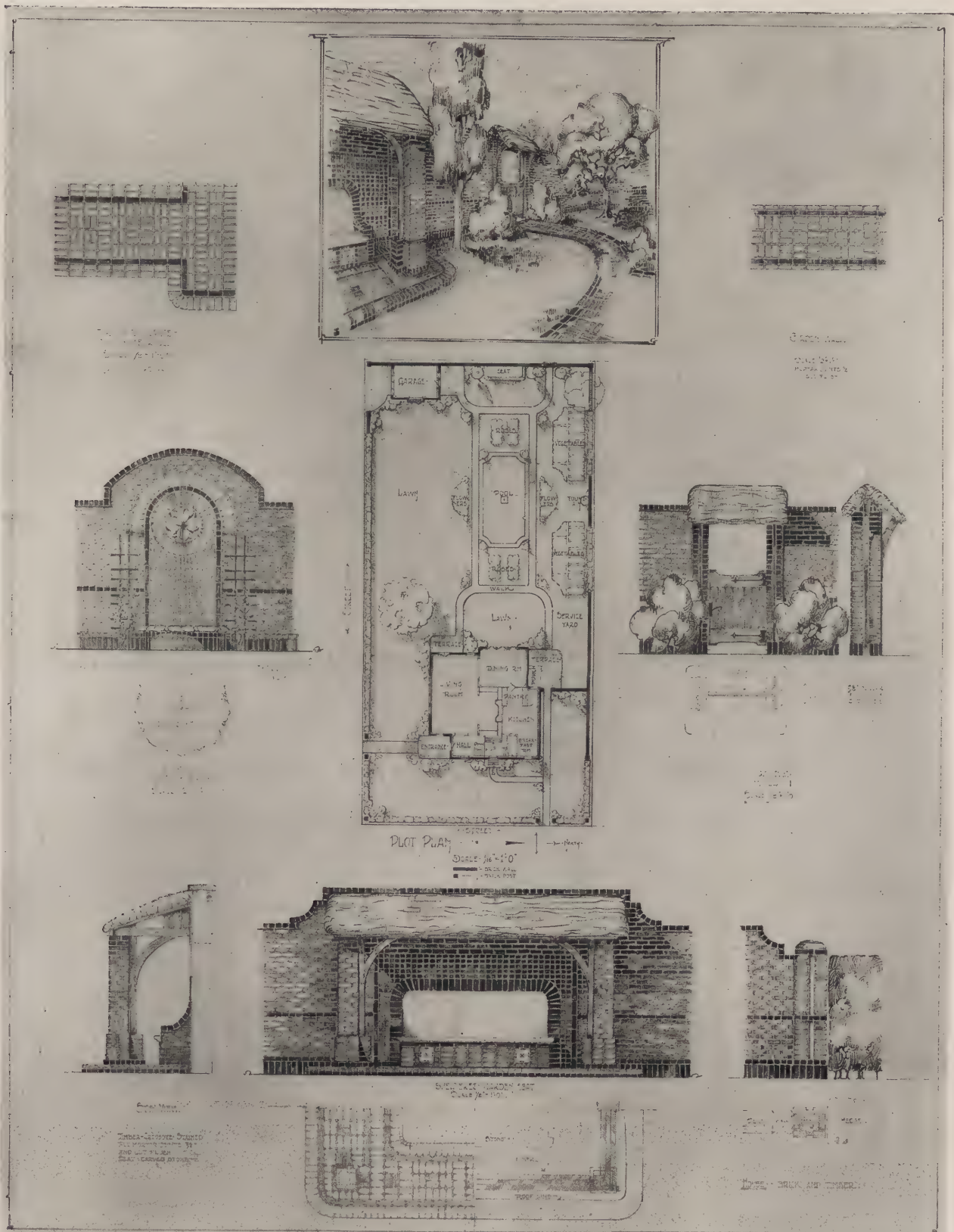
Figure 10. Photograph of Detail of
Renaissance Panelling.

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Figure 6. Doorway of Church of S. Trophime at Arles, France. Drawn by Douglas D. Ellington.

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Design by Mrs. Ruth L. Gerth, of Minneapolis, Minn., Who Won the First Prize of Five Hundred Dollars in The American Face Brick Association's Competition for Designs for Garden Architecture in Face Brick. See text on the opposite page.

THE GARDEN ARCHITECTURE COMPETITION

Report of the Awards for the Best Designs for Architectural Features in Face Brick Work for the Grounds or Garden of a Residence

THE Competition for the prizes offered by the American Face Brick Association for the Best Designs in Face Brick Work for the Garden closed February 5 and was judged in Chicago February 23. The prizes aggregating more than Fifteen Hundred Dollars were awarded by a Jury of five prominent architects from different sections of the country. The competition was conducted by PENCIL POINTS for the donors of the prizes.

The designs which won the first and second prizes are shown here in general and in detail, the whole drawing being reproduced at small scale to show the sheet arrangement and to give an idea of all the features presented, while certain details are shown at larger scale in order that the rendering and design features may be seen more clearly. The third and fourth prize sheets are also shown. A portrait of Mrs. Ruth L. Gerth, winner of the First Prize, and a biographical account are published on page 47 of this issue. The report of the jury is as follows:

Report of the Jury

The jury of awards, which met in the office of Alfred Granger, Chicago, Friday, February 23, 1923, was made up of the following architects: Alfred Granger, Chicago, Chairman; Russell F. Whitehead, New York; Frederick W. Garber, Cincinnati; Edward Stotz, Pittsburgh; George A. Chapman, Minneapolis.

Of the designs submitted, a considerable number had to be eliminated from the judgment because of the failure of the contestants to meet one or more of the mandatory conditions of the program. Some competitors failed to include plans of the various features which were called for both in plan and elevation. Others failed to designate on the drawing the exact width and kind of mortar joints to be used. Various other failures to observe the conditions, caused the elimination of still other entries. The jury regretted the necessity of eliminating these drawings from the judgment because of the carelessness of the competitors in failing to meet the plainly stated requirements of the program.

The remaining drawings were numbered to correspond with the sealed envelopes containing the names of the competitors and the jury proceeded to place the drawings in the order of their merit.

The first prize, Five Hundred Dollars, was awarded to drawing No. 36, submitted by Mrs. Ruth L. Gerth, of Minneapolis, Minn. This design showed an unusual grasp of the requirements of the program. The characteristics of the design were markedly domestic and well adapted to a lot

of the size stated, 100 x 200 feet. The author showed an excellent appreciation of the value of space in a property of this size and her treatment of brick was commendably simple and quite original in handling.

The second prize, Three Hundred Dollars, was awarded to No. 17, submitted by Louis C. Rosenberg of New York. This design was also of unusual merit and was a close contestant for first place, in the minds of the jury.

The third prize, One Hundred-Fifty Dollars, was awarded to design No. 31, submitted by A. Alex. Willson of Pittsburgh, Pa. The fourth prize, One Hundred Dollars, went to drawing No. 34 submitted by Leslie W. Devereux of New York. The designs to which third and fourth prizes were awarded, while possessing merit and showing evidences of careful study, were not regarded by the jury as being in the same class with the designs that won the first and second prizes.

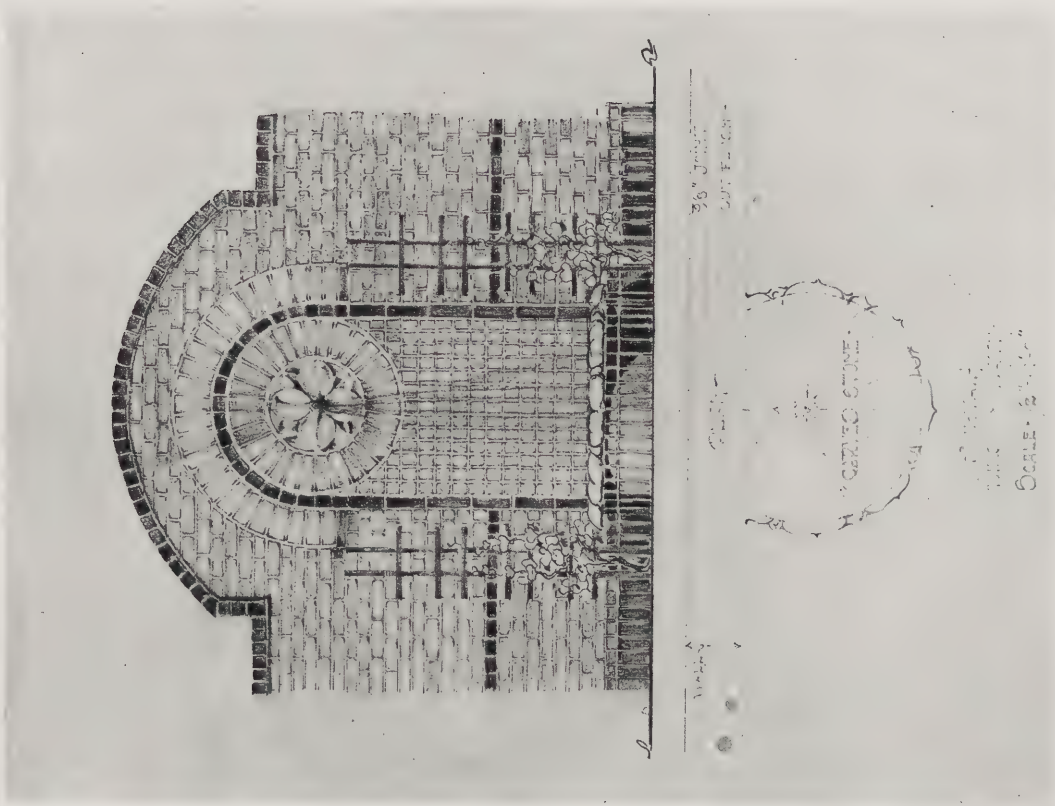
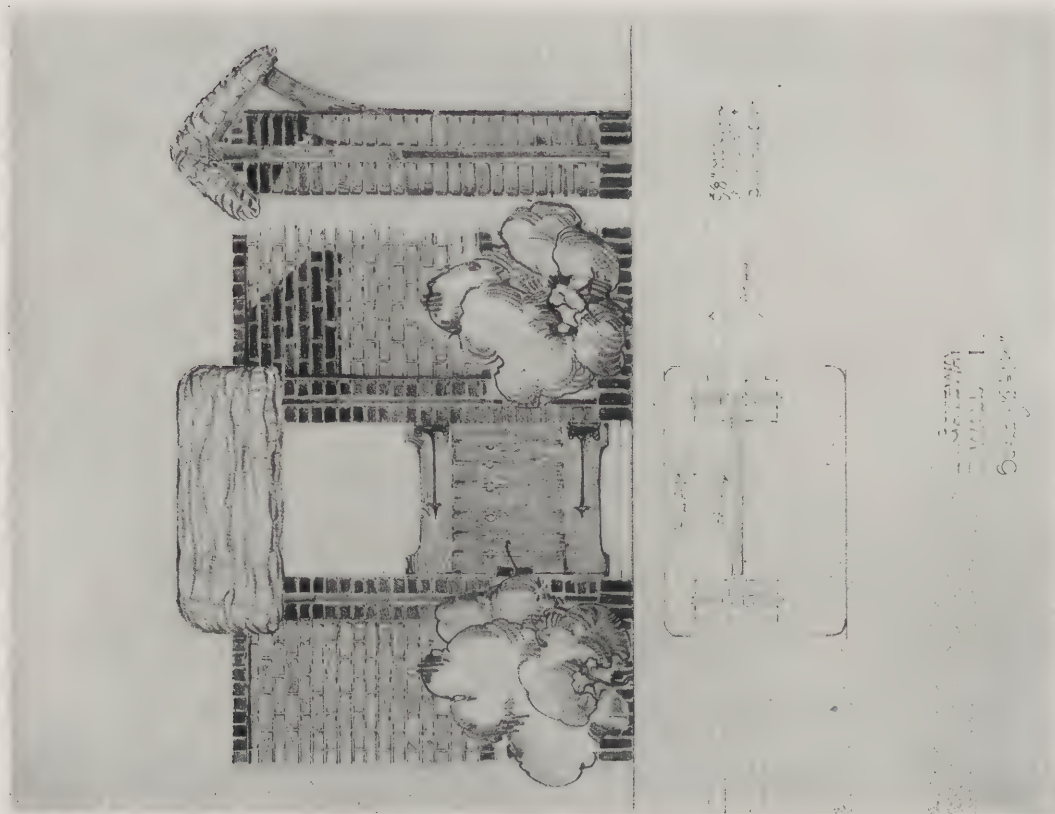
The ten Fifty Dollar prizes were awarded to the following: B. L. Ryan, San Francisco, Cal.; George K. Jackson, Philadelphia, Pa.; Everett D. Woods, Memphis, Tenn.; E. C. Stiles, Oalsmont, Pa.; William Blackwell, Toronto, Ont., Canada; Peter Koetz, Washington, D. C.; M. Vaughn Woodard, Red Oak, Iowa; James C. Green, Stamford, Conn.; Leo C. Brumm, Yosemite, Cal.; Will. H. Creaser, Detroit, Mich.

While a majority of the designs submitted indicated study and thought on the part of the competitors the jury could not but feel somewhat disappointed with the quality of the entries in general. In the opinion of the jurors many of the competitors failed entirely to grasp the essential requirements of the program. Many of them failed to appreciate the fact that the layout for the garden and grounds on a plot of the size indicated should be essentially domestic in its conception and adapted to the requirements and means of an owner who wished to build an attractive home of moderate size rather than an ambitious establishment. In point of rendering the jury felt that the competitors had shown far greater ability than in the quality of design.

The jury feels that the American Face Brick Association, who instituted this competition, and the publishers of PENCIL POINTS, who conducted it, have done much through this means to encourage the study of a subject which should be of great interest to architects, landscape architects and draftsmen and believes that similar competitions should enlist the enthusiastic support of the best men throughout the country.

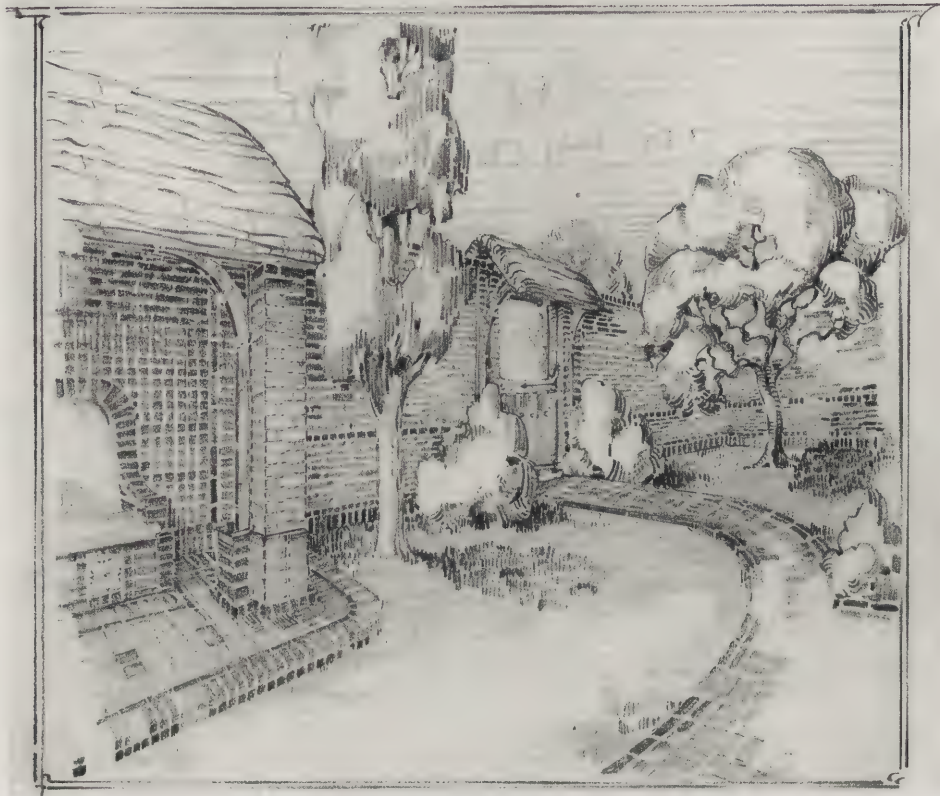
ALFRED GRANGER, *Chairman.*

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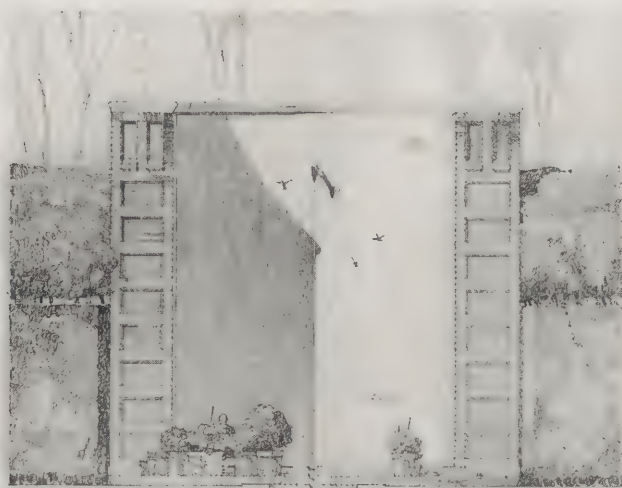


Details of Designs by Mrs. Ruth L. Gerth, Winner of the First Prize in the American Face Brick Association's Competition for Designs for Garden Architecture.

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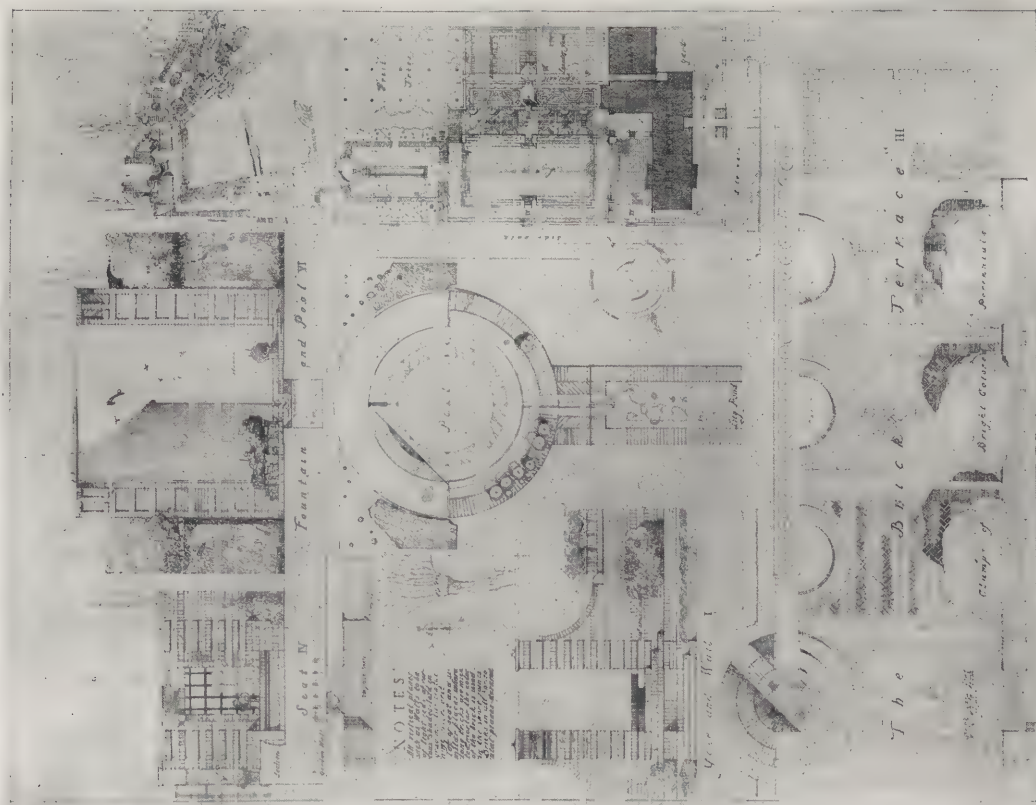
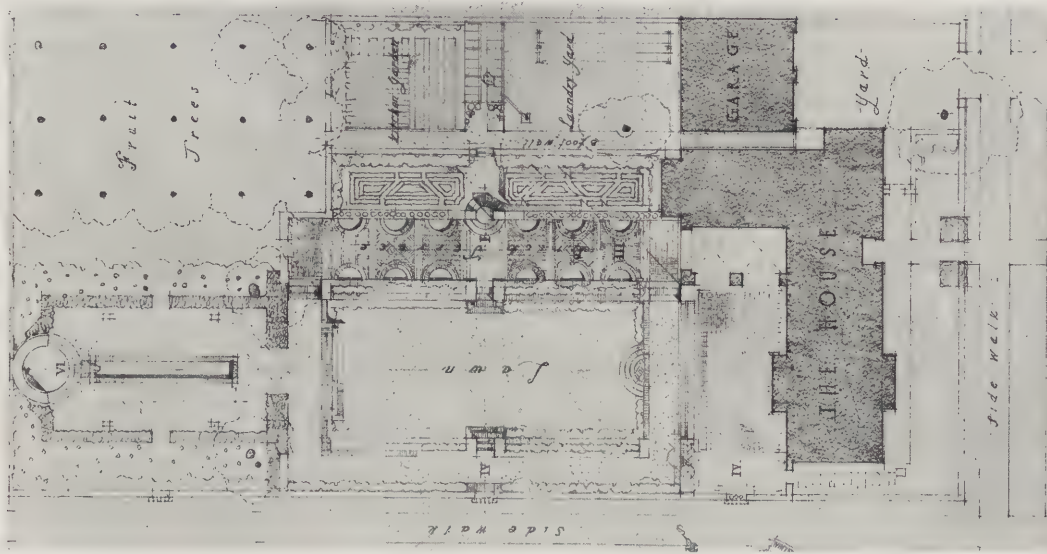
*Perspective from Mrs. Gerth's
First Prize Drawing.*



Fountain and Pool VI

*Detail by Louis R. Rosenberg. Winner of the
Second Prize.*

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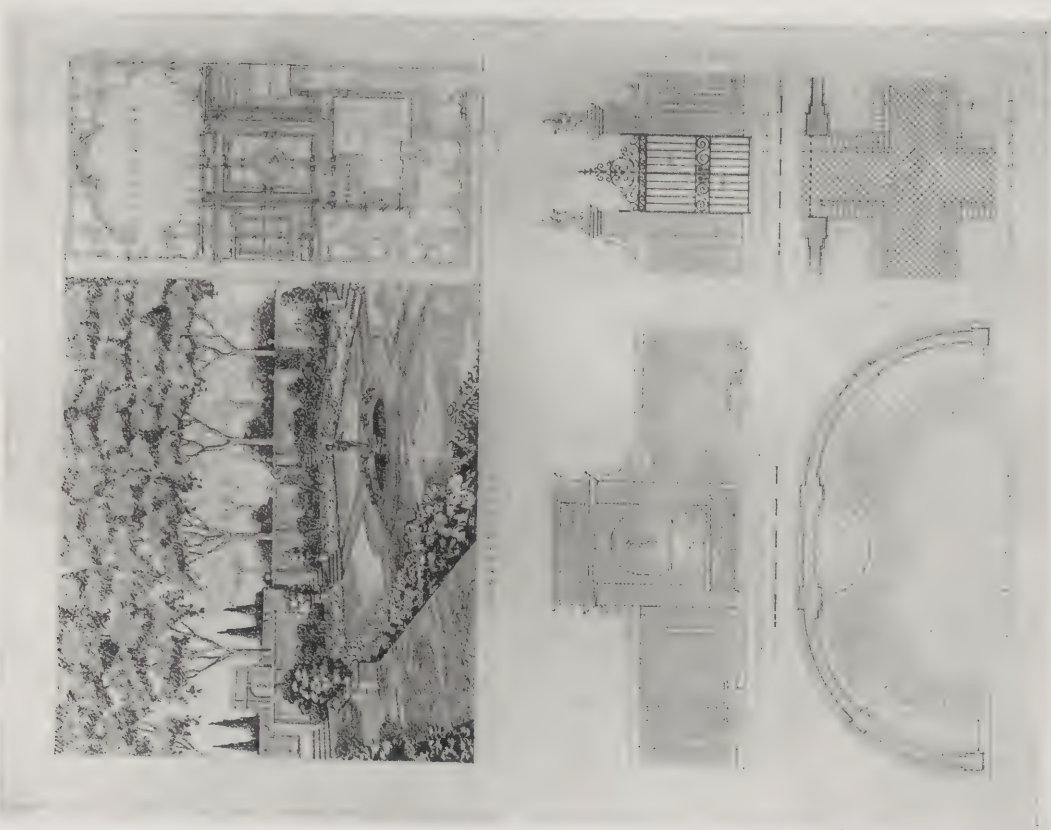
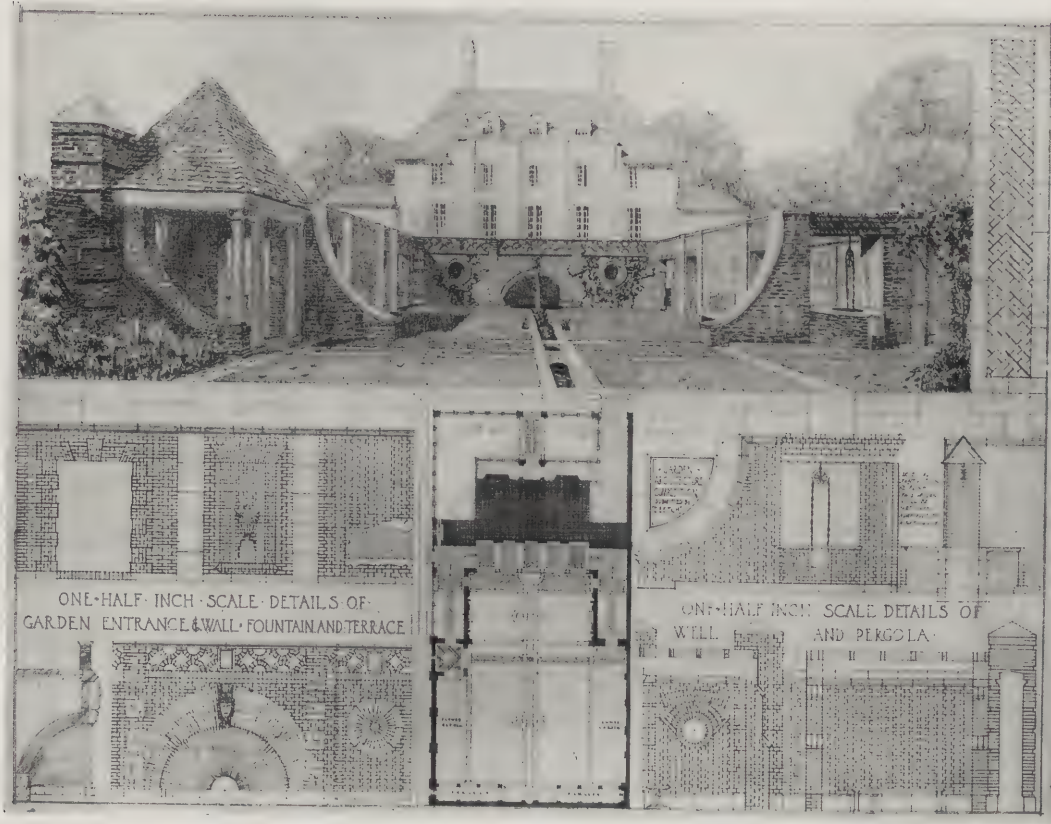
Design by Louis C. Rosenberg, New York City, Who Won the Second Prize of Three Hundred Dollars in the American Face Brick Association's Competition for Garden Architecture. Plan Shown Above at Larger Scale.

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Perspective from the Sheet of Drawings by Louis C. Rosenberg, Winner of Second Prize in the American Face Brick Association's Competition for Garden Architecture.

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Third and Fourth Prize Designs in the American Face Brick Association's Competition for Garden Architecture, Submitted by R. Alexander Willson, Pittsburgh, Pa., and Leslie W. Devereux, Respectively. The Third Prize Design is shown at the Top of the Page, the Fourth Prize Design Below.

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AWARDS IN HOSPITAL DESIGN COMPETITION.

THE first prize in the international competition recently conducted by *The Modern Hospital* magazine for the plans of a small general hospital was won by Butler & Rodman, Architects, New York City. Three awards, of \$500, \$300 and \$200 each, and two honorable mentions were given.

Second and third places in the contest were won by John Roth of Atascadero, Cal., and Ernst Hoedtkke of Cambridge, Mass., respectively. Selection was made from fifty-one sets of plans submitted from various parts of the United States, and from Canada and England as well. Judgment was based on economy in construction and operation, integrity of the designs, health values and flexibility.

Cervin & Horn, architects, Rock Island, Ill., were given first honorable mention in the competition, the other honorable mention going to Lemuel Cross Dillenbach of the School of Architecture, University of Illinois.

The jury of award, composed of Dr. S. S. Goldwater of New York, Asa S. Bacon of Chicago, Clarence H. Johnston of St. Paul, William Buck Stratton of Detroit, and Miss Adelaide M. Lewis of Kewanee, Ill., met in Chicago in March to study the plans.

Announcement of the awards will be made in the April issue of *The Modern Hospital*, and in the succeeding number will appear the prize plans with the interpretations of the judges. Subsequent publication, with critical comments, will be made of fifteen or twenty others of the more interesting designs for their educational value.

Charles Butler, of the firm that was awarded first place, is a graduate of Columbia University and of the Ecole des Beaux Arts in Paris. He is a Fellow of the American Institute of Architects; Chevalier of the Legion of Honor of France; Officer of St. Sava, Serbia; and President of the New York Chapter of the American Institute of Architects. He and his firm have planned a number of important hospitals in New York, at other points in the eastern part of the country, and abroad as well.

ATELIER WYNKOOP-SEYMOUR.

FOLLOWING the death of John Wynkoop in December the Atelier Wynkoop was for a time without a patron. In January, A. D. Seymour consented to become patron of the Atelier which has been named the Atelier Wynkoop-Seymour. The officers of the Atelier are as follows: H. B. Marsh, Massier; Mr. Herrick, Sous-Massier; John Clauss, Librarian.

PHILADELPHIA ARCHITECTURAL EXHIBITION.

THE Twenty-sixth Architectural Exhibition of The Philadelphia Chapter of the American Institute of Architects and the T-Square Club of Philadelphia will be held at The Galleries of the Art Alliance, 1823 Walnut Street, Philadelphia, Pa., May 12-27, 1923. Exhibits will consist of drawings, models, and photographs of proposed or executed work of structural, decorative and landscape architecture; academic drawings; sketches and paintings of decorative subjects. Sculpture and paintings not architectural in character will not be exhibited.

The Exhibition Board consists of the following: Ellery K. Taylor, A. I. A., Chairman; John Craig Janney, Secretary; Roy Banwell, Treasurer; Thomas Edward Ash, A. I. A.; Sigmund J. Laschenski; W. H. Livingston, and R. J. Wadsworth, A. I. A. Ex Officio; Charles Z. Klauder, F. A. I. A., and H. L. Duhring, A. I. A.

THE USE OF COLOR IN ARCHITECTURE.

(Continued from page 14)

of the stucco without carrying the color into the fissures, streaking and washing to tone down the work until it had the soft effect of age. For instance, there were Spanish doorways sixty-five feet high that, when the scaffolding was carried away, looked as though they had been there for three hundred years or more; they held color in the recesses of the ornament where the weather would not have reached and removed it. There were capitals seven feet or so square, cast in the tawny buff color of the exposition with reds and blues and other colors, applied lightly in some places and with greater strength in others, the colors were stuck in the recesses and wiped off of the portions in relief. Compare the effect of such a capital with one cast entirely in white and left without color and you have a striking example of the value of color in giving a sense of richness, texture and quality to architectural detail.

The color used in architecture becomes stronger as one travels from England into the Orient. In England one seldom sees columns of beautiful colored marble. In Italy one does see them, and in Spain there is much color, particularly in such buildings as the Alhambra and other Saracenic buildings. In northern Africa, Turkey, Greece and Egypt, always there is color and sunshine, vibrant and ever changing.

In using color in interiors the conditions are naturally quite different from those met with out of doors. The lighting and the proportions of the rooms are among the more important things that have to be taken into account. In the dining room of the Hotel Pennsylvania, illustrations of which appear on page 14, part of the problem was to produce as great a sense of height as possible in a room the actual height of which was limited by practical considerations. Consequently, the color scheme is lighter than is traditionally employed in this style and the aim was to give to the coloring a tenderness and bloom that would produce a sense of texture and an appearance of age. The colors throughout were carefully studied and toned down to produce this effect.

AMERICAN ACADEMY IN ROME

(Continued from page 18)

anese helmets, and two Saracenic shields and a Saracenic helmet. Prof. Curtis is planning an exhibition of this armor in the museum.

"We have had three visits of interest. Mrs. A. Ross Hill, wife of the American Red Cross Commissioner to Greece and a Trustee of Vassar, was greatly interested in what the Academy is doing. The famous English painter and etcher Mr. Cameron, a Trustee of the British School, went over the building and asked all sorts of questions. Finally we have had a visit from a dozen "Civics" (this is what Dr. Ashby calls them), sent out by England to study conditions in Italy."

PENCIL POINTS

FETE CHARRETTE.

THE student body of the Harvard School of Architecture and the Department of Architecture of the Massachusetts Institute of Technology, having agreed to collaborate annually in the production of a costume ball modeled in a general way on the ball given annually by the Ecole des Beaux Arts, Paris, held the first of the series of parties, the "Fête Charrette," on the evening of February 22. This year the Harvard School of Architecture, through its student organization, The Pen and Brush Club, had charge of the party, the Architectural Department of "Tech" rendering valuable assistance. The plan is that each of these schools shall take the responsibility for the party, in alternate years. The aim is to give to these parties the air of having been produced by one school with two ateliers.

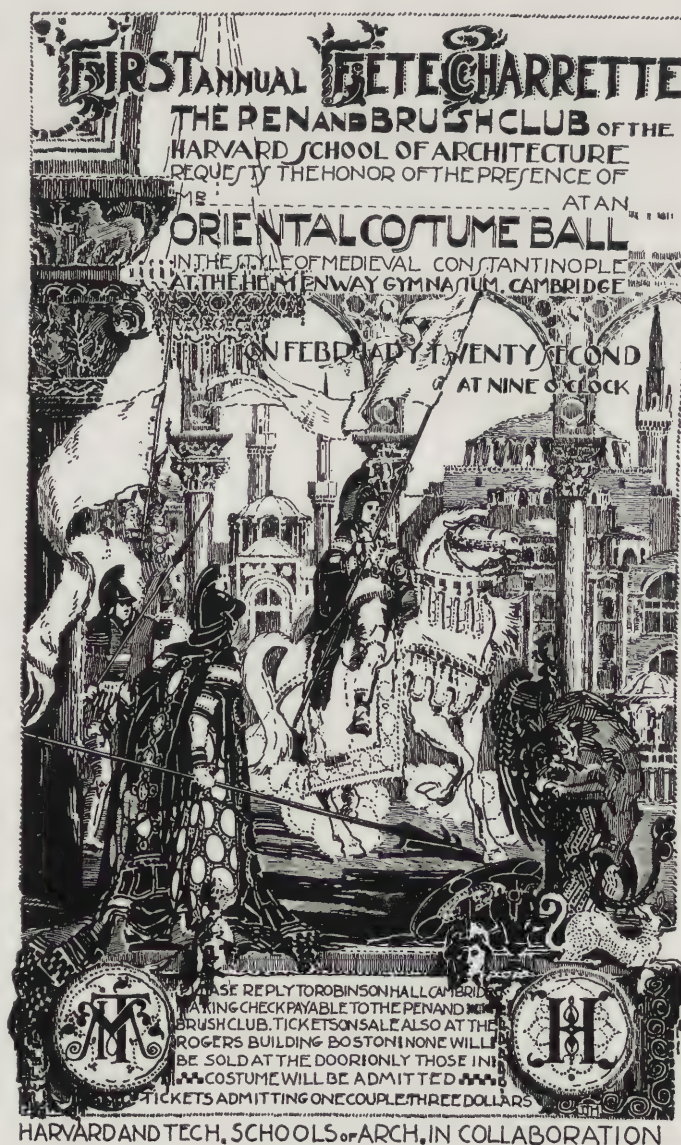
Professor J. J. Haffner of Harvard who, by the way, is a member of the Legion of Honor, and a holder of the Grand Prix de Rome, designed a very charming invitation in pen and ink, thereby immediately setting a dazzlingly high standard to which the rest of the preparations for the party must needs rise. In it was announced the style in which the ball was to be done, being that of Mediaeval Constantinople. This style was adopted for the first of the series of parties chiefly because it was thought wise in an enterprise, the idea of which was so comparatively new to this country, not to limit the scope of the individual imagination to any very exact period; and as Mediaeval Constantinople was the constant meeting place of the whole of the civilized world, both Occidental and Oriental, it was agreed that, outside of the setting, any costume that might conceivably have been seen in the streets of Byzantium, between the time of the Emperor Constantine and the beginning of the Sixteenth Century would be considered as coming within the scope of the idea of this party.

A general dance committee was appointed, each member of which was to be the chairman of one of the various sub-committees for entertainment, finance, decorations, costumes and publicity, so that in some capacity or other every member of the Harvard School became personally responsible for the success of the enterprise, beyond his assumed financial responsibility with its necessary sale of tickets. Tech very generously volunteered to produce a dramatic interlude, the exact nature of which was to be kept secret until the very night of the party, together with various other features in the manner of vaudeville and tableaux vivants, as well as to contribute toward the decoration of the hall and to attend to their own mailing of invitations and making of posters for local display. The making of the decorations necessary to transform a rather bare hall into a glittering representation of the vanished glories of the capitol of the Eastern Roman Empire was, of course, the most difficult part of the undertaking; and it is with pardonable pride that the school feels it achieved a very creditable result, inasmuch as the "atmosphere" of the settings was wholly adequate to the requirements, and distinctly novel in effect, having been achieved largely through the medium of lighting effects, the apparatus for which, together with a large part of the purely scenic properties, were generously loaned by the famous Harvard 47 Workshop of Professor G. P. Baker, one of the plays of which, by the way, is now enjoying a highly successful run on Broadway.

Little by little the work of preparation proceeded; first the compiling of an invitation list, and the sending of invitations, and the production of over a dozen posters, then the securing of the music, excellently supplied by the

Technology Jazz Orchestra, and the engaging of a caterer and selection of supper menus, then the making of the decorations—scene painting, drapery designing, lamp manufacture, and all the infinite little odds and ends that count so much in the final ensemble, then the rehearsing of the various vaudeville numbers, and finally, and perhaps the most important of all, the making of the costumes.

Came the night of the ball. As each guest entered the long hall hung with what appeared to be sumptuous draperies and priceless Oriental rugs he or she stood for a moment involuntarily spellbound. The floor was a magnificent whirlpool of color, picked out in places by rainbow spot-lights that brought forth flashes of gold and precious gems. The costumes were superb. This was no commonplace masquerade in cheesecloth and charcoal, but a stunning panorama of silk, satin, and cloth-of-gold. Everyone had entered into the spirit of the original idea of the party, and it was easier than not to imagine that these gorgeous people were all participants in the magnificent intrigues of the corrupt Byzantine Court. At



Invitation for the Recent Fete Charrette of the Harvard School of Architecture and the Department of Architecture of M. I. T.

PENCIL POINTS

the far end of the hall, in a blaze of light, was a most convincing stage-setting of Arab inspiration, before which, from time to time appeared the fantastically attired entertainers who had been recruited from the ranks of both schools.

The ball was officially opened with a joyful pageant symbolizing the friendly union of the rival schools of Harvard and Tech, which was most effectively carried out, leaving no one in doubt as to the permanently friendly relations between these two great institutions. There followed intervals of dancing and vaudeville entertainments, culminating in the performance given by Tech. On the programs it was announced as "Two Tanks' Farewell Party, Or Why the Tomb Was in Disorder"; and when it was over everyone admitted that as a spontaneous conception of classic burlesque the show was a triumph, well deserving the highest praise. Then came the grand march, with the awarding of prizes for beauty and originality of historical thought in the costumes, and then the supper, which was not elaborate, but altogether satisfying. The closing feature of a party that from every point of view, including the financial, was an emphatic success, was a glorious battle of confetti and colored streamers so that when the crowd reluctantly departed, there were many who felt that after all it was not such a privilege as is commonly thought to be a citizen of the twentieth century if Mediaeval Constantinople had as many charms to offer as had its revival in this the first annual Fête Charrette.

ST. LOUIS ARCHITECTURAL CLUB

FRIDAY, February 9th, 1923, marked the opening of a new era for the architects in St. Louis with the City's favorable vote on an eighty-seven million dollar bond issue. The opportunity will surely be met as enthusiastically as was the World's Fair project twenty years ago, and will challenge the membership of the St. Louis Architectural Club to assume leadership in civic affairs when the Supervisory Committee is ready for actual work on the items concerning city beautification.

There are six projects for which the Committee will undoubtedly ask the local chapter of the American Institute of Architects to conduct competitions. The total sum voted for these six items is nineteen million, two hundred and fifty thousand dollars and provides for a new Courthouse, Municipal Auditorium, World War Memorial Building with its surrounding plaza, an Aquarium, new Public Market Houses, and also a plaza to occupy four city blocks facing the Union Station.

The very gratifying outcome of the election (twenty items out of a total of twenty-one having received the necessary two-thirds majority) is the result of many years' work on the part of a group of St. Louisans, several of whom are practising architects. As a matter of fact the agitation in this city for civic improvements of a physical character began with the Architectural Club as long ago as 1900. Reviewing the Club's Yearbook of that date it will be found that drawings were published then by our members suggesting a civic center between Twelfth and Fourteenth Streets from Market to Olive Street, as has now been finally agreed upon, and another improvement suggested at that time was a comprehensive plan of streets and boulevards. This, too, will become a reality in the near future. Other needs pointed out in the Year Book for 1900 were new Public Market Houses and a new City Hospital.

With St. Louis starting so ambitious a civic program and Missouri's magnificent new Capitol at Jefferson City now completed, it seems fitting that the national convention of The American Federation of Arts is to be held here during the latter part of May, this year.

A FEATURE of the New York "Own Your Home" Exhibition at the 71st Regiment Armory, Lexington Ave. and 25th Street, will be "The House that Bob Built," constructed on the floor of the exhibition and designed to incorporate the latest ideas in small house planning and equipment.



F. RAY LEIMKUEHLER

F. RAY LEIMKUEHLER, President of the St. Louis Architectural Club for the present year, was born in St. Louis in 1895. He received his training at Washington University, where he obtained a Bachelor's degree in Architecture in 1917, also winning the St. Louis Architectural Club membership prize for the most meritorious work during his senior year at school.

Having enlisted in the Field Artillery during the war, he went overseas and spent fourteen months in France, during ten months of which he was at the front. For four months he was numbered among the American Expedition Force students at the Ecole des Beaux-Arts in Paris, Ateliers Laloux and Gromort.

Upon his return to this country, he entered the office of Denison & Hiron of New York City. In 1919 he returned to Washington University and obtained a Master's degree the following year, and was placed among the first ten in the preliminary competition for the "Academy in Rome" prize.

Mr. Leimkuehler held the office of Secretary for the Architectural Club for two terms, and in 1920-21 he was elected National President of the Scarab Society. He has been engaged as instructor for several years, both in public and high schools, and was appointed instructor at Washington University during the year 1921-22.

He has been connected with several architects' offices in Missouri and acquired most valuable experience in the office of Willima B. Ittner. Recently he has been appointed job captain in the office of A. B. Groves of St. Louis.

T-SQUARE CLUB OF PHILADELPHIA.

THE feature of the meeting of the T-Square Club, Philadelphia, for March 7, was a presentation of motion pictures of the "Evacuation of Smyrna," with a talk by William A. Lloyd, an Australian who has been for twenty-seven years a resident in the Near East as a newspaper correspondent for the Liverpool Courier.

For the meeting on March 21, arrangements have been made for a talk by Arthur I. Meigs, of Mellor, Meigs & Howe, Architects, on the subject, "Gardens and Photography." The current exhibition at the Club is a very fine collection of etchings by Frank Brangwyn.

PENCIL POINTS

TRIBUTE TO SIR CHRISTOPHER WREN

THE Architectural League of New York recently paid a graceful tribute to one of the world's greatest architects, Sir Christopher Wren, upon the two hundredth anniversary of his death. The League, learning that the Royal Institute of British Architects were to have a special delegation hang a wreath upon the tomb of Sir Christopher Wren in St. Paul's Cathedral, arranged with Ambassador Harvey to have a representative from the Embassy carry a wreath at the time of the R. I. B. A. pilgrimage. Mr. Ian McAllister, Secretary of the R. I. B. A. has expressed his pleasure at this tribute from America as a delightful and unexpected addition to their program.

To commemorate this event simultaneously with the ceremony in London, Howard Greenley, President of the Architectural League of New York, assisted by members of the Executive Committee, hung a wreath under a portrait of Sir Christopher Wren in the Annual Exhibition of the League.

Below we quote the address made by Mr. Greenley on this occasion:

"The thirty-eighth Exhibition of the Architectural League is strengthened and embellished by a comprehensive exhibit of the work of notable contemporaneous English Architects officially shown for the first time in this country through the courtesy and interest of Paul Waterhouse, Esquire, the President of the Royal Institute of British Architects, seconded by the untiring efforts of our esteemed member, Mr. Alfred C. Bosson.

"This exhibition takes on further significance through the fact that simultaneously in England and here in America we are offering to Sir Christopher Wren, perhaps the most notable of all English architects, the honors of bi-centenary remembrance. His lofty expression of the value and importance of architecture may be summed up in his own words. 'Architecture has its political use, public buildings being the ornament of a country. It

establishes a nation, draws people and commerce, makes the people love their native country, which passion is the original in all great actions of a common-wealth.'

"With his history you are all well acquainted. Born on October 20th, 1632, his early education was acquired at Westminster School and afterward at Oxford. Until he was thirty years old he displayed no distinct tendency toward the art of architecture, confining himself to matters of science to which he made valuable contribution. After the great fire of London in 1666, he developed a comprehensive plan for the rebuilding of the city, which in point of design can be said to be some two hundred years in advance of his time. His masterpiece is unquestionably the Metropolitan Cathedral of St. Paul in London originally begun upon the lines of Inigo Jones of which great master he was the pupil. To show the prodigious quality of his work in his capacity of Surveyor General of the King's works, a position he held for forty-nine years, reference should be made to the Churches of London of which he reconstructed over fifty on their Mediæval sites in the Renaissance manner, with special attention to St. Mary le Bow in Cheapside, Saint Brides in Fleet Street and Saint Martin's in Ludgate Hill, whose towers and steeples are of surpassing beauty. Of equal importance is the new wing at Hampton Court Palace the Greenwich Hospital, Kensington Palace, Marlborough House and the Library at Trinity College, Cambridge.

"Perhaps one reason for his success can be attributed to the extremely able body of fellow craftsmen he gathered around him, a subject of unusual significance to the members of the League in the principle of its own composition, such names as Strong, his master mason; Jennings, his master carpenter; Cibber and Grinling Gibbons, his sculptors and carvers, and Jean Tijou, his iron worker, and the craftsmen that worked under him.

"The last five years of his life, until his death in February, 1723, were somewhat clouded by the neglect he suffered at the hands of his official patrons. Nevertheless he has left us a memory as imperishable as the monuments he conceived and executed.

"The architecture of Christopher Wren in England represents the soul of a man of whom England should ever be proud, an architect, sprung from and nourished by herself and worthy to be placed in the first rank of men of genius of all time.

"And so, with entire consciousness of the honor of representing you, the Architectural League of New York, in this memorial ceremony which we are conducting here today and which will be also performed at the ceremonial in the Cathedral of Saint Paul in London by his Excellency the American Ambassador, I place this tribute from American architects of today at the feet of the great architect of yesterday whose name and whose work are an inspiration for all ages—Sir Christopher Wren."

CHICAGO WOMAN'S DRAFTING CLUB

A DRAFTING club composed entirely of women was organized a year ago in Chicago under the name of the Chicago Woman's Drafting Club. The president, Miss E. A. Martini, is the only licensed woman architect in the city. The members are actively engaged as "draftsmen" in architectural, mechanical and structural lines. Meetings are held once a month, each member in turn having charge of the program and giving a talk concerning her particular line of work.

The club would like to get in touch with other women's clubs in regard to the work they are doing with the hope of exchanging helpful ideas. Address all communications to the secretary, Miss Florence Wright, 71 E. Elm Street, Chicago, Illinois.



SIR CHRISTOPHER WREN.

Courtesy of The Architectural League of New York

THE Architects' Costume Ball of the State College of Pennsylvania was held Saturday, March 10, at the A. D. S. House. The cover of dance program which we have received shows a very effective design in red and black on orange paper, the head of a picturesque Spaniard with typical hat and inevitable cigarette. The design is in the flat tones of a block print.

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MEYER AND HOLLER'S ANNUAL DINNER AND DANCE

THE First Annual Dinner and Dance of the office of Meyer and Holler, Architects, Los Angeles, Cal., was held on the evening of Feb. 20, at the Palais Royale.

The entertainment of the evening was carried through most successfully and showed clearly the spirit of good will that exists throughout the organization. The program is especially well gotten up, including a very attractive cover design printed in brown and applied to the cover. The program itself is of harmonizing buff paper printed in brown.

PERSONALS.

L. T. BENGSTON is practicing architecture at Room 510 Travelers Building, Richmond, Va., the partnership of Benton & Bengston, architects, having been dissolved.

SCOTT QUINTIN, Architect, is now located at 219 West Main Street, Alhambra, Cal.

GOOD & WAGNER, Architects, have removed their offices to the Mohawk Building, 209½ Water Street, Akron, Ohio.

WALTER C. SHARP AND W. BROWN FOWLER are now associates in the firm of Herbert M. Greene Company, Architects and Engineers, Dallas, Texas. The firm name remains unchanged.

HUGH A. SPRAGUE, who was for several years associated with Robert B. Cridland, Landscape Architect, 1000 Bailey Building, Philadelphia, Pa., has opened an office as Landscape Architect and Engineer at 2939 Clifton Street, Indianapolis, Ind.

FITCH H. HASKELL, Architect, has removed to 65 North Raymond Avenue, Pasadena, (Tel. F. O. 3290), where he will practice in association with Cyril Bennett, Architect.

GEORGE BAIN CUMMINGS, Architect, has removed his offices to 520 Security Mutual Building, Binghamton, N. Y.

PASQUALE M. TORRACA has been selected as instructor in architectural design in the Department of Architecture at The Pennsylvania State College. Mr. Torraca is a graduate of the University of Pennsylvania.

JAMES P. BAUGH has opened an office for the practice of architecture at 403-404 First State Bank Building, Waco, Texas. This is the office formerly occupied by Birch D. Easterwood, Architect, for whom Mr. Baugh has been chief draftsman for the past eight years.

GEORGE B. BANGS, Architect, has opened an office at Hollywood, Florida.

LLOYD RALLY, Architect, has opened an office at 1019 Wright & Callender Bldg., Fourth and Hill Streets, Los Angeles, California.

THE SCARAB SKETCH EXHIBIT

THERE is on the road, and showing at the present time at Armour Institute, an exhibition of sketches of the work of students in the Scarab Architectural Fraternity. This exhibit is the representative work in sketching of the students in the Colleges and Universities in which Scarab has temples. The sketches, presented in any medium, are collected annually by the temples in turn and a traveling exhibit scheduled to include all the temple schools. The plan was devised to stimulate and inspire students in sketching during their vacation periods and judging by the quality of the work submitted, the idea has met with success.

Scarab has also held a competition, the winner of which is to receive fifty dollars in cash and a medal of the society. The preliminary to this competition was held last month in each school where Scarab is represented and the winner in each received a medal. The three best drawings from each temple will be sent to the convention city and there judged by leading architects of that city during the days of the Convention. The artist of the winning design of this judgment is to receive the final prize. The convention will be held this year at Armour Institute, Chicago, April 6-7.



RUTH L. GERTH

RUTH L. GERTH, winner of the First Prize of Five Hundred Dollars in the American Face Brick Association's Competition for the Best Designs for Face Brick Work for the Grounds or Garden of a Residence, is associated with Wm. H. Gerth, working together as consultants and designers in decorative art. She studied architectural drafting in Omaha, took the required course at the Art Institute, Chicago, both day and night classes, then specialized in design and color in the night classes. In the third year of school Mrs. Gerth outlined her own course in design, studying in the Art Institute Library, in place of night classes.

Mrs. Gerth's work has been shown in the following exhibitions: Applied Arts Exhibition, at the Art Institute of Chicago, 1918; Chicago Architectural Exhibition, Art Institute, Chicago, 1920; St. Paul Architectural Exhibition, St. Paul, Minn., 1922.

Mrs. Gerth has done much designing for decorative materials, furniture and lighting fixtures, etc., including designs for special furniture, drapery materials, color schemes, etc., hundreds of fixtures for various Chicago manufacturers, also book plates, greeting cards, etc., and in collaboration with Mr. Gerth, war medals, service pins and war workers' pins.

Lecturing is one of Mrs. Gerth's activities for she gave fourteen talks at the Minnesota State Fair in 1922; and a series of talks for the College Woman's Club, State Home Economics Association, Woman's Community Council and League of Women Voters.

Recently she has designed sets of patterns for metal stampings for a firm in Providence, R. I.; lighting fixtures for several eastern manufacturers and for several large high schools. She has just been commissioned to design and supervise the lighting installation of a new two and one-half million dollar university library building, and she won first and second prizes in the recent Cloister Clock Competition.

THE Convention of the Western Arts Association will be held in St. Louis in May, with the Chase Hotel as headquarters. This hotel is in one of the beautiful residential sections of the city and diagonally across from Forest Park. The Art Museum is in Forest Park, also the Jefferson Memorial, which houses collections and exhibits of the Missouri Historical Society.

THE SPECIFICATION DESK

A Department for Specification Writers

The contributions printed below were received in response to the suggestion published in the January number that the papers in that issue be discussed with a view to bringing out any additional ideas bearing on the specification problem. It is hoped that all who are interested in the preparation of specifications will feel free to submit their ideas for publication in subsequent issues of PENCIL POINTS.

SPECIFICATIONS FOR CRITICISM.

ACTING on the suggestion of one of our readers, Mr. M. N. Nirdlinger, of Nirdlinger and Marlier, Pittsburgh, we have secured a set of architect's specifications for a brick and hollow tile residence and we print below the first part of this set of specifications in order that they may be criticized by our readers. The object in doing this is to provide material for a discussion that will be helpful to all who have to do with the preparation of specifications by showing up the weak points in this set of specifications.

You are invited to join in and help rip up these specifications. We are withholding the name of the architect from whom we borrowed these specifications and he has entered into the spirit of the thing so you may feel at liberty to criticize them as severely as you like. We hope that you will also present many suggestions for improvement. The good resulting from this discussion will be in proportion to the number of men who join in with criticisms and suggestions, so we ask that you do not depend on the other fellow doing it but write us yourself, then the thing will be a success. Here is a good sized portion of the specifications—let's go!

SPECIFICATIONS

OF

Workmanship and materials to be used in the erection and completion of a brick residence and garage

FOR

.....

ON

A certain piece of property located

AT

.....

CITY

In accordance with the accompanying plans, etc., and under the supervision of

....., ARCHITECTS

CITY

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CUT STONE WORK, page 7
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FACE BRICK WORK, page 9
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DRAWINGS:

Consist of survey sheet, cellar, first, second, attic and roof plans; front, rear and side elevations, and sections on which are figured height of stories, size of joist, etc., and preliminary detail sheet setting forth portions of the more important work.

The drawings, together with all figures and writing thereon, shall constitute part of these specifications.

GENERAL CONDITIONS:

PART 1.

The following specifications are intended to embrace all labor and materials necessary in the erection and completion of the buildings herewith described. The contractor is to give his personal attention, superintendence and direction to the work, keeping also a competent superintendent constantly on the work from the time excavation is started until completion of contract, including the contracts of all sub-contractors. Contractor's superintendent will superintend all work and give instructions. The superintendent is to be subject to the approval of the architect.

Contractor's superintendent must check up materials and workmanship of all the different sub-contractors and be able to give the necessary reports to architect on demand.

PART 2.

Before work under this contract is started, the contractor shall provide on property (location to be given by the architect) an outside privy for the use of the workmen. On completion of the buildings, privy must be removed from the grounds and hole to be well tamped and filled with clean earth. The privy to be in keeping with the City Laws.

PART 3.

The contractor is to provide all labor, materials, carriage transportation, apparatus, machinery, tackle, centering and scaffolding necessary for the complete and substantial execution of everything described, shown or reasonably implied on the drawings or in these specifications.

PART 4.

The drawings and specifications are intended to cooperate and agree, and anything mentioned in these specifications, though not shown on the plans in particular, or shown on the plans and omitted in these specifications, is to be considered as mentioned in both, and must be executed in a thorough and workmanlike manner, satisfactory to the architect and owner.

PART 5.

The contractor is to take no advantage of any manifest omission or discrepancy that may be found to exist between the plans and specifications, and in all differences and disagreements as to sizes, materials and work-

PENCIL POINTS

manship, the decision of the architect upon his own plans and specifications is final and binding on the contractor. The contractor must count all the work, etc., as per the plans and specifications as architect will insist on his complying with them.

PART 6.

Discrepancies, if any, must be reported immediately to the architect for his revision or correction; the architect will supply details for such work as hereinafter specified, and as occasion necessitates. All details must be carried out in a careful manner, as the contractor will be held responsible for them and will have to make corrections at his expense.

Figured measurements on plans to be taken in preference to the measurements of scale and when no figures or details are given, use the scale, calculating from figures given.

PART 7.

Particular care must be taken by the contractor of materials and finished work as the buildings progress which must be thoroughly protected and covered up from injury or defacement during the execution and until the completion of his work or contract, and he must make good any defect, settlement or shrinkage in the work arising from neglect, defective or improper materials or workmanship which may arise before the final completion of the buildings.

PART 8.

All work and materials shall be subject to the approval of the architect who shall have the right to approve, condemn and inspect all work and materials at any or all times, and all condemned or rejected work and materials not in accordance with the plans and specifications shall immediately be torn down and removed from the buildings and grounds within twenty-four (24) hours after condemnation, and replaced with the kind that does conform with the plans and specifications; the architect's decision regarding the above is final and binding on all parties and cannot be appealed.

PART 9.

All payments made on the work during the progress of buildings on account of this contract, or of extra work, shall in no case be considered as an acceptance of the work executed, but the contractor shall be liable to all the conditions of the contract, until the work is finally completed and accepted.

All extra work, including percentage work, on the above buildings, to be governed by all the conditions of these specifications.

PART 10.

The contractor shall provide proper and sufficient safeguard and protection against the occurrence of any accident, injury, damages or injury to any person or property during the progress of the work and up to the final acceptance by architect, and shall alone be responsible. Contractors shall take out and pay for all permits, including building, water, for gas and electric and telephone lines into building for sewer connections, to occupy streets, etc., according to the City Laws, Gas & Electric Companies' rules as their interests appear and in all cases, are to pay for same, and each sub-contractor is to pay for the water he uses during the progress of the buildings.

The contractor will see that lights are put on the materials extending beyond the property line, and he is also to keep pavements and streets clear according to the City Laws. Each contractor upon the work, shall be required to use the best mechanical judgment in its execution, whether it is or not particularly mentioned in these specifications or carried out on the details, certain things follow naturally in well constructed buildings that must be considered.

The general and sub-contractors will make thorough inspection of property, pavements, curbing and street before submitting estimate and before actual work is started as the general and sub-contractors will be responsible for any damage done to property, pavements, curbing and street during the construction of buildings.

PART 11.

The owner and architect and architect's agents have the right to enter the buildings at all times, and the privilege to make changes they deem advisable. *The contractor must demand written orders for such changes or same will not be considered on final payment of buildings.* Such changes that are made will in no way invalidate the contract, but will be deducted from or added to balance of the contract, as the case may be.

PART 12.

The architect has the right to discharge any workmen on the buildings without question.

PART 13.

The buildings are to be insured by the owner.

PART 14.

When the buildings are finished they are to be broom cleaned and all rubbish, etc., removed by the contractors. Each contractor is to make good any work damaged by him to the work of the other contractors during the progress of the work, and they are to leave the buildings in a finished and clear condition.

PART 15.

All drawings, blue prints and specifications are the property of the architect, and shall be kept constantly at the buildings during the progress of the work and at completion of the buildings shall be returned to the architect before the final payment is made. All mill details, plans, etc., are included in the above.

PART 16.

The owner reserves the right to reject any or all bids. The names of all sub-contractors are subject to the approval of the architect and owner and a complete list must be submitted to the architect before the signing of the contract. The changing of sub-contractors after the signing of contract will not be permitted.

NOTE:

The following specifications are for the residence. Contractors will find garage specifications attached to the back of these specifications but it must be understood that the construction of garage will be governed by all the above general conditions.

EXCAVATION:

Excavation to be made under building for cellar when completed 7'-2" in the clear from finished cellar floor to underside of joists at wall lines with an average fall to bell traps of 1" to 5'-0". All excavation to be made at least 6" larger on all sides than figured sizes given on drawings.

Excavate extra depth all around and at inside walls, chimneys, piers, etc., for footings which will have a 6" projection on the outside for main walls and on all sides for chimneys, piers, posts, etc.

Do all excavating, per drawings, for terrace foundations, areas, etc. Necessary excavation for front terrace to be in a separate estimate.

(Plumbing contractors will do their own excavating for pipe trenches.)

Concrete floor in cellar will be 4" thick. (The stone contractor will fill in between walls and banks as walls are being built but not until after they are pointed and inspected and approved by architect.) *All earth taken out of excavation to be left on property where directed by architect.* Final grading, leveling and sodding of property will be let under separate contracts.

This contractor will see that the spaces under unexcavated portions of porches are filled up to finished grade line before porch floors are installed so no low places will exist at the enclosed portions of building. Such top soil as exists where excavations occur shall be placed in a pile at rear of property for future use in connection with landscape work.

This contractor will submit a separate estimate for extra excavation according to the above specification quoted by the cubic yard.

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CONCRETE FOOTINGS AND RUBBLE STONE WORK:

NOTE:

This, the stone contractor, will include the filling in around all foundation walls up to finished grade line. Said fill to be put in place after exterior of stone walls are pointed and approved by architect. The fill must be clean earth, well tamped and soaked as it is put in place.

All walls, piers, posts, etc., are to start on concrete footings of thickness and size shown on drawings. Said footings to be true in line and surface. Concrete for said footings to be made up of either A—, A—, V—, L—, or U— P— cement, sharp, clean river sand and clean washed medium size gravel (whichever brand of cement is adopted same shall be used throughout the work as no mixing of brands will be permitted).

Proportions for the above footings to be 1, 3 and 5, well mixed dry on clean platforms, then moistened and again mixed at which time it shall be put in place and well tamped.

All walls, piers, etc., above footings, unless otherwise shown on the drawings, or hereinafter specified otherwise, to be built of good quality of B— C— or local sand stone, which must be of good size and laid up with good bonds, well bedded in mortar as hereinafter specified. Through headers to be used freely, and only such spalls will be permitted as are absolutely necessary. No filling in of walls will be tolerated. All walls to be pointed on both sides in a neat and careful manner. Leave all openings and recesses as shown on drawings and as required by the different trades.

All walls except where chimney abutments are shown and where brick veneer is shown on face of foundation stone walls shall be 18" thick. Walls to be carried up straight and plumb and leveled off as shown. Walls to be laid to a line. Chimney abutments that are built in with main walls are to be built up same height. Inside cellar window sills to receive 1" cement finishing coat 45 degrees trowelled to a smooth and even surface.

Cellar chimneys, piers, etc., free from outside walls will be built of brick from the top of footings. This contractor will furnish his own scaffolding. This contractor will give an extra price for rubble stone work quoted by the perch and for extra concrete work quoted by the yard.

MORTAR FOR RUBBLE STONE WORK:

Mortar for rubble stone work to be made up of best grade S— lump lime which shall be properly slacked at least seven (7) days before being used on the work and properly mixed in rich proportions with sharp river sand and tempered with one sack of the cement used by this contractor for his concrete work to a cubic yard of mortar. The above mortar to be mixed in beds.

CUT STONE WORK:

All work shown on drawings and where especially indicated such as the several door sills, bell blocks, basement window sills, etc., shall be worked from clean No. 1 quality C— blue sand stone with rubbed surface. The stone to be of uniform color, sound and free from defects and laid on its natural bed. The stone work to be of sizes shown and in all cases to work with brick courses. Bell blocks, where shown, shall be drilled for wires. Door sills will have wash cut on same. Above cut stone work shall be protected up to completion of building at which time it shall be thoroughly cleaned and pointed with mortar similar to that specified for face brick work.

BRICK AND HOLLOW TILE WORK:

All the walls to be of thickness as shown on the several drawings, including such work as shown brick in cellar. Above work to be built in form and arrangement as shown, with good hard burnt brick. All rough walls

shall be built with one (1) row of headers every sixth course.

(To Be Continued)

THE STUDY OF ARCHITECTURAL DESIGN

(Continued from Page 34)

for the measured drawing—all of the season, or even all of the next season, if one has his subject reapproved at the beginning of the new (Academic) year—much is expected in the way of presentation. Something more than for a usual problem is expected in the way of composition of the sheet.

This does not mean that more articles must be grouped together, though a complete presentation as in fig. 7 may be very satisfying,—but simply a greater effort at composing well what one has decided to use, whether it be simple or complex—it may be only one drawing—as in fig. 3 or fig. 5. It is then a question of determining where on the sheet the drawing shall go. Where details are shown, the relation of these to each other and to the central drawing must be studied as for the analytic, but carried further, because of the greater time at one's disposal, as already said.

Note in fig. 8 how the furniture is added to "make a composition" of an otherwise uninteresting piece of panelling, and how the pieces of china in the cupboard give a needed point of interest.

It goes without saying that the drawing must be carefully—neatly done, and that any lettering used as a part of the composition must be studied in its spacing, and in its relation to the rest of drawing; such attributes as the china just spoken of, costumes of figures, etc., should be of the period, and may be found in books or museums; and finally the rendering must be good, as there is no excuse for carelessness when time is practically unlimited. In fig. 9 for instance, you will see the same modelling of the moulding, by means of washes within parallel lines, as in the French plates, and yet this drawing gives the appearance of great simplicity of presentation. Make studies of the presentation first in charcoal until the values are satisfactory and then make a study in color before starting the rendering of the drawing itself.

A LETTER FROM THOMAS W. LUDLOW, A. I. A.

IT GIVES me pleasure to endorse your campaign for better specifications, commenced in the Special Specification Number of PENCIL POINTS, issued in January, and also to note that you propose to publish a specification for a small brick and tile residence *in toto*, with notations for its betterment.

Your magazine is primarily the one in which this campaign should be conducted, as it reaches better than any other publication, the architectural student and younger draftsmen. Men who in ten years will be commencing their own practice, with no other knowledge of specification writing and use of materials than that imperfectly gathered from the specification writers in the offices where they have worked, who are too busy to give instruction to their juniors when writing specifications, and when not so occupied the question never arises. Therefore when the young architect is confronted with writing his first specifications, he will copy without modification all sections that are not fully understood, from a specification for a similar type of structure to the one in hand, without having seen the plans which it was intended to supplement and having no knowledge of the special conditions that governed the site. The result is a confusion of clauses that discredits the writer both in the eyes of his client and those of the contractor.

About twenty years ago I won a scholarship that permitted me to study in Europe. I thought that I had attained the goal—a design man. The awakening was still before me. Shortly after returning I began to pick up a practice, and then for the first time did the co-ordination of specifications, use of materials and design dawn upon me as the major principle underlying all architecture. My utter ignorance of the first two sub-

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jects was appalling. Through months of hard work, I became competent to write specifications from which contractors can submit intelligent and reasonable bids, and later construct the building without extras.

My difficulties in this all important subject have been shared by scores of others, and in writing this word, I am lending support to a movement which will assist younger men to shorten the long road of experience, through the advice and help of their elders.

A LETTER ON SPECIFICATION WRITING.

FROM a member of the staff of a specification department of one of our large eastern municipalities we print the following extracts:

The writer desires to express his appreciation of the interest which you have aroused in the important field of specification writing. It is hoped that you will keep this up until some practical improvement is realized.

Having had many years of experience in working from specifications, probably some of your readers would be interested in this viewpoint.

It is noticed that one of your writers gives as one of the main requirements "flexibility." This may be valuable to the architect but is the greatest nuisance to the owner, contractor, superintendent, inspector, foreman and workmen. It is the cause of most of the delays and unnecessary expense connected with any structure. The owner does not know what to expect for his money; the contractor does not know what to figure on; the superintendent does not know what to demand; and the workmen do not know what to do until the architect is called up and time is given for him to make up his mind, and then the definite specification is given by telephone and often work has to be done over owing to misunderstanding. The popular clauses "as required," "to the satisfaction of the architect," "good and sufficient," "in a workmanlike manner" all through the specification make it profitable for the contractor to keep a box of good cigars in the drawer under the plan table. * * *

We would appreciate it if architects would make up their minds when they turn out specifications and drawings, and make everything definite at that time, instead of later when the work is ready to be done.

We will appreciate it if the architect will not specify things which he knows will not be done, or if done would cause unnecessary expense, such as, "Common brick shall be of even color and shall not be dumped from carts or wheelbarrows." "All cement shall be furnished in barrels," and the like.

We would appreciate it if specifications were not made up of so much stuff which make them so bulky that it takes so much time to read them. By this is meant all matter which is perfectly clear on the plans and long wordy sentences. For example, in one article in a certain specification there is repeated nine times, "No. 11 wire (diameter, .1205 inches)." This gage is Washburn & Moen, Am. Steel and Wire Co., and Roebling, while Birmingham or Stub's iron wire is only .0005 less. It would seem that "No. 11" or simply "1/8 wire" would do as well. We know that diameter is meant and that inches is meant.

Another popular fad is expressing all dimensions and quantities in both words and figures. This is not done on drawings where the figures are made by hand and in crowded places and there is a possibility of their being mistaken. This is a heritage from the days of the goose-quill pen. Figures made with the typewriter or printed are unmistakable and there is no more reason for repeating them than there would be for repeating everything else.

We would be thankful for an index in alphabetical order. The "order of the work" is only imaginary. In estimating and in doing the work, it is nearly all started and carried on together.

We would appreciate having the work of different sub-contractors on separate sheets, so that they could be given out for estimates and for work independently.

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Architectural Detail Folio.—Loose-leaf folio containing 26 plates of detail drawings showing various types of elevator door hangers and other hardware for use in connection with elevator doors. A valuable adjunct to any working library. Size of plates 11 1/2 x 16. Size of portfolio 8 1/2 x 11. Richards-Wilcox Mfg. Co., Y-21, Aurora, Ill.

Detail Manual.—Hand book with detail drawings devoted to screening, storm door hardware, blind hardware, garage hardware, bolts and butts. Carefully compiled, and valuable reference work. Loose-leaf. 118 pp. 7 1/2 x 10 1/2. Ask for "Manual P. T." The Stanley Works, New Britain, Conn.

Homes of Comfort.—Suggestions for appropriate bath room fixtures for the home. Fully illustrated with engravings and diagrams showing ideal layouts for bath rooms. Specialties and fittings. 118 pp. 5 1/2 x 8 1/2. Crane Co., 836 South Michigan Ave., Chicago, Ill.

Plumbing Suggestions for Schools and Other Educational Institutions.—Illustrated booklet showing full line of equipment suitable for uses indicated. 74 pp. 5 1/2 x 8 1/2. Crane Co., 836 South Michigan Ave., Chicago, Ill.

Plumbing Suggestions for Hotels.—Illustrated booklet showing full line of equipment suitable for hotel installation. Diagrams. 60 pp. 5 1/2 x 8 1/2. Crane Co., 836 South Michigan Ave., Chicago, Ill.

Solving Your Painting Problems.—Illustrated booklet containing specifications for both inside and outside work. 44 pp. 8 1/2 x 11. Hockaday Co., 1823 Carroll Ave., Chicago, Ill.

"White" Door Beds and Space Saving Devices.—A booklet for architects illustrating various types of space saving devices. Detail drawings and plans. 24 pp. 8 1/2 x 11. Albert Pick & Co., 208 W. Randolph St., Chicago, Ill.

The Story of Shearduct.—Brochure illustrated with full page pencil drawings of buildings by prominent architects in which Shearduct has been used. Specifications and six pages of sectional drawings. Tables or dimensions, etc., 40 pp. 8 1/2 x 11. National Metal Molding Co., Pittsburgh, Pa.

Floors and Roofs of Reinforced Gypsum.—Data Sheet covering this subject written by Virgil G. Marani. Gypsum Industries Association, 111 W. Washington St., Chicago, Ill.

The following papers by the same author are now also ready for distribution. Fallacious Deductions Possible Upon Existing Evidence of Sound Tests, The Question of Corrosion, Gypsum Plaster Affords Fire Protection, Suggested Provisions for Building Codes.

Specifications for Face Brick Work.—Skeleton specification sheet covering various types of brick work. American Face Brick Association, 130 No. Wells St., Chicago, Ill.

The Operation of Boilers.—Booklet showing construction and operation of various types of Kewanee Boilers. Diagrams, tables, etc., 24 pp. 6 x 9. Kewanee Boiler Co., Kewanee, Ill.

Zeolite Water Softener.—Bulletin 509 A. I. A. Standard File 29 D 32. Data on the chemistry of water softening with notes on construction and operation of Zeolite Softener. 8 1/2 x 11. Graver Corp., East Chicago, Ind.

The Gospel of Fresh Air.—Booklet on the subject of ventilation equipment suitable for various types of buildings. Technical data. 24 pp. 4 x 9. Ohio Body and Blower Co., Cleveland, Ohio.

Portland Cement Stucco.—Illustrated booklet showing various types of finishes, typical construction details, etc., 16 pp. 8 1/2 x 11. Portland Cement Association, Conway Bldg., Chicago, Ill.

Also published by the Portland Cement Association and now ready for distribution, Concrete School Houses, Concrete Commercial Garages, Concrete Hotel, Apartment and Office Buildings and Concrete Mercantile and Industrial Buildings of Concrete.

Atlantic Terra Cotta.—Monthly brochure No. 10 showing examples of 12th Century Lombard Romanesque. Eight full page plates. 8 1/2 x 11. Atlantic Terra Cotta Co., 350 Madison Ave., New York City.

The Bond that Guarantees the Wall.—Illustrated Brochure showing advantages and uses of Carney's cement for mortar. 24 pp. 8 1/2 x 11. The Carney Co., Mankato, Minn.

The Right Angle.—Monthly magazine, the March issue of which deals with theatre construction. Several pages of detail drawings. 16 pp. 8 1/2 x 11. The General Fireproofing Company, Youngstown, Ohio.

What an Architect Discovered about Integral Waterproofing.—A paper by Mr. Samuel R. T. Very, architect, discussing the subject indicated. Also giving results of certain recently conducted tests. 8 pp. 8 1/2 x 11. The Truscon Laboratories, Detroit, Mich.

A Free Employment Service for Readers of PENCIL POINTS

Advertisements covering "draftsmen wanted" and "positions wanted" will be printed in this column free of charge. Such advertisements will be printed in one issue only and limited to thirty-five words. On subsequent insertions of the same advertisement a charge of 5 cents a word will be made.

Architects requiring the services of draftsmen, and draftsmen desiring positions, are invited to communicate with this office stating full particulars as to position, qualifications, salary, etc. In addition to printing these wants in PENCIL POINTS they will be posted on THE BULLETIN BOARD in our office.

Draftsmen in New York and vicinity desiring positions are invited to call and inspect THE BULLETIN BOARD and also post notices offering their services.

Information regarding positions will be forwarded, on request, to draftsmen and architects residing in other cities.

In undertaking this service we accept no responsibility other than transmitting the information in the manner above stated.

There is no charge for this service.

To avoid confusion we request immediate notification when the position is filled or obtained.

THE PENCIL POINTS PRESS, INC.,

Phone Madison Square 5940, Dept. E.

19 East 24th St., New York

AFTERNOON, EVENING, or HOLIDAY WORK WANTED in New York architectural office. Have had six years' general office experience and one year's study of architectural drafting and building estimating at the Mechanics' Trade Institute. Louis Caputi, 27½ Morton St., New York City. Phone Spring 6561.

FORMER JUNIOR PARTNER in well known firm, having been in government work, desires new connection. Twenty-five years designer, specification writer, detailer, and supervision of work of highest class. Highest references. Box 72, PENCIL POINTS.

JUNIOR DRAFTSMAN is seeking position with reliable architect in New York City. One year experience on small private houses. Student of Columbia Evening Course. Box 73, PENCIL POINTS.

POSITION WANTED: Would like to connect with well-established concern in or near New York City manufacturing heating and ventilating equipment. Record of training and experience upon request. Box 74 Pencil Points.

POSITION WANTED as draftsman on country house work. 5 years experience. 26 years old. Box 75 Pencil Points.

OPPORTUNITY AND NOT A JOB WANTED: Place with architect doing mostly country house work. Have had eight years' experience and am capable. Box 76 Pencil Points.

POSITION WANTED: An A-1 Senior Architectural Draftsman and Designer, age 38, thoroughly experienced and technically trained, desires position with reliable concern with opportunity of becoming identified with firm. Can take charge of jobs. Box 79, Pencil Points, 19 East 24th St., New York City.

POSITION WANTED: as building material estimator by technical college graduate, 22 years old. Prefer to locate in Middle West or South. Would expect \$35 weekly. Box 80, Pencil Points, 19 East 24th St., New York City.

OPPORTUNITY WANTED with growing organization, in Boston, Pittsburgh, New York. Can manage drafting or entire office and show profits, produce specifications, working drawings, sketches of high quality, detail and supervise any branch of construction. Want good salary. Address Box 77 Pencil Points.

WANTED: OVERTIME WORK, vicinity of New York City—evenings, Saturday afternoons or holidays, by designer who has had twelve years' experience in sketching, perspectives, and designing. Box 81, care Pencil Points, 19 East 24th St., New York City.

POSITION DESIRED WITH FIRM DOING COUNTRY HOUSES by junior draftsman—22 years old. Have had two years at Cooper Union Night School and am attending Columbia Night School. Have been one year in office that specializes in school design and am still employed there. Box 82, Pencil Points.

WANTED: Senior architectural draftsman, capable of developing plans from a rough sketch. A permanent job for the right man. State experience, wages wanted, and when could report, and other particulars. J. C. Fulton & Son, Architects, Uniontown, Penna.

WE HAVE OPENINGS for several good men. Can use young designer as assistant to head designer. Also men with experience on working drawings. Prefer those who want to settle permanently and become part of our organization. Magaziner, Eberhard and Harris, 603 Chestnut Street, Philadelphia, Pa.

DRAFTSMAN WANTED: At once—an A-1 Architectural Draftsman. Good salary. Steady employment. State salary expected and other details. Address, A. F. Lindsay, Sikeston, Mo.

WESTERN POSITIONS—Several openings for well qualified architectural draftsmen in Colorado and adjoining states. Write Business-Men's Clearing House, Denver, Colo.

DRAFTSMAN WANTED: For Office in North Carolina doing large work. Please state experience and salary required. Box 78, Pencil Points, 19 East 24th St., New York City.

DRAFTSMEN WANTED: Mowbray & Uffinger, Inc., Architects, 221 West 57th Street, New York City, require the services of several good draftsmen on bank and office buildings. Permanent positions are assured to competent men. They would also like to get in touch with a good specification writer. Inquire for Mr. Muller.

W. G. CLARKSON & COMPANY, Architects, First Natl. Bank Bldg., Fort Worth, Texas, want to get into communication with competent experienced architectural draftsman, a good designer of sufficient experience to take charge of activities in drafting room of an active, rapidly growing general architectural office. Must be thoroughly qualified educationally.

WANTED: JUNIOR DRAFTSMAN. Permanent position in established architect's office for energetic young man. Ample opportunity for advancement. State all particulars. Malcolm B. Harding, Architect, Westfield, Mass.

EXPERIENCED DRAFTSMAN wanted at once with ability to develop working drawings and full size details on high grade buildings. D. A. Bohlen & Son, 1001 Majestic Bldg., Indianapolis, Ind.

WANTED: High grade designer for a three million dollar public building. Matter of salary secondary. John and Alan McDonald, Omaha, Nebraska.

WANTED: Architectural Draftsman able to make working plans from sketches under general direction of head draftsman. Position permanent. Good opportunity for advancement. Write stating age, experience, salary, and send specimens of work, general drawings and details. Wm. W. Slack & Son, 144 East State St., Trenton, N. J.

OUR THIRD ANNIVERSARY

THE old folks say that if an infant successfully passes through its second summer it has a good chance of living to a ripe old age. If there is any truth in this old saying, PENCIL POINTS appears to have passed the crisis successfully, as we can now boast of three whole years.

While we have not by any means accomplished all the things we had in mind when we plunged into the field three years ago, we do feel a slight glow of pride and satisfaction in the progress we have made along the road which we have laid out for ourselves.

First and foremost we have an army of more than 10,000 regular subscribers—architects, specification writers, draftsmen and students of architecture, all of whom together constitute what is broadly understood by the term architectural profession. We not only have this large and constantly growing group of readers, but we have ample evidence that our subscribers like our paper, want to see it prosper and are willing to do all they can to make it better and more useful from month to month. We know this because of the letters we get from all sections of the country expressing appreciation of what we have done and in many cases pointing the way to improvement. This is most stimulating to us as we want to improve PENCIL POINTS, in every way we can, so that it may be of the greatest use and interest to all classes of readers in all parts of the country. Nor is our circulation limited to the United States. We have at the present time nearly 900 readers outside of the United States and its possessions. For this we are very glad, as architecture is one subject in which there should be no such thing as a borderline or a frontier.

And our advertising section, which naturally started in a small way, has developed in most gratifying fashion during the past year. Manufacturers are beginning to appreciate not only the great importance of the architect as a factor in the sale of their goods, but the part played by the specification writer and the draftsman in the selection of materials is also being appreciated more and more as time goes on. We have been fortunate in attracting to the pages of our journal the advertising announcements of a group of producers and manufacturers of the very highest class. We commend these firms to the attention of our subscribers as being worthy of their fullest confidence and we trust that when our readers are communicating with our advertisers they will take the slight added trouble of mentioning the name of this paper.

You all know what we have done in the past thirty-six issues of PENCIL POINTS. We trust that our program has been such as to serve you satisfactorily and to give you what you want—and need. For the future we have only to say that we purpose following the same general editorial principles which have so far proven to be so popular, with two modifications, or rather additions, which have become possible now that the amount of space available for editorial material has been increased. Starting with this issue we are taking up some of the practical, every-day work of the drafting room for careful analysis and study. We refer to the series of articles by Mr. Breiby, the first installment of which begins on the next page, and which

treats of "The Making of Working Drawings." This series will be continued in the coming months and we also have the promise of additional articles on drafting room practice, drafting room conditions and drafting room economics, which we believe will be equally interesting to all the various elements represented by our subscription list.

We trust that any of our readers who would like to see any particular matter pertaining to drafting room procedure discussed in our pages will let us hear from them. Anyone who has a suggestion which he thinks would be valuable to his brothers in the profession is invited to submit an article or a digest of it to us for consideration. By telling the man in San Francisco what the man in New York is doing and vice versa we render available for general use ideas and methods which have been found to work in one place and which would no doubt be equally successful if adopted under similar circumstances elsewhere. We want PENCIL POINTS in the future, even more than it has been in the past, to be a clearing house for all the things which interest so vitally those who read our paper. Do not hesitate to send even short items, as a ten line note, if it contains material of interest, is most welcome.

So far we have stuck to the little sentiment expressed in our first issue, that PENCIL POINTS is to be edited *with* our readers rather than *for* them. We want to extend this principle even further as we do not believe any publication can serve its readers as well as it should by following any other policy.

We take this opportunity to thank all of those who have contributed so much by way of encouragement, suggestions, and advice, and especially to extend our best wishes to that staunch group of charter subscribers who came to us to the number of over three thousand before our first issue was published, and most of whom, we are glad to say, still appear on our subscription list.

We realize that during the coming year we have a big job ahead of us in serving our readers during a period of great activity. We hope to be equal to the task and all we ask is that each of our subscribers lets us hear from him at least once during the year. If you like some particular thing we have done, drop us a line and tell us so. If you have a criticism to offer, shoot it before you have a chance of forgetting it. If you have a suggestion to make, please do not fail to get it down on paper and send it to us. It will take but a few minutes of your time to comply with this request and this co-operation from our readers will make our fourth year the best yet.

In addition to publishing PENCIL POINTS we have, as our readers know, begun during the past year the publication of a group of books intended to form a practical working library on the various interests centering in the drafting room. The two books already issued under the general title of THE PENCIL POINTS LIBRARY, namely, "Sketching and Rendering in Pencil" by Arthur L. Guptill, and "Good Practice in Construction" by Philip G. Knobloch, have met with gratifying success. Other books in this series are in preparation and will appear in the near future.



Figure 1. Plan of Bank of Niagara, Niagara Falls, N. Y. Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

THE MAKING OF WORKING DRAWINGS

GENERAL DRAWINGS

BY JOHN C. BREIBY

This is the first of a series of articles in which Mr. Breiby, of the staff of Carrere & Hastings, will give much practical information on drafting room work. This first article covers the preparation of general drawings, the one-quarter or one-eighth inch scale drawings. The succeeding articles will cover the making of three-quarter and other scale details, architectural models relating to them, shop drawings, etc. At the conclusion Mr. Breiby will take up the preparation of sketches, etc., particularly sketches of interest to the drafting room.—Ed.

ROUGH architectural sketches of plans, sections and elevations, are prepared by the architect or his designer for the study and solving of a particular problem, after which more completed presentation sketches or elaborate drawings are made to show the client how the completed building will look from a point of design and utility. When such drawings or sketches satisfy the client or so-called owner, the word to "go ahead with the job" will be given, and the project then becomes "active work." Up to this point the drawings have been worked out with a view of scheme and design. From then on, the practical and analytical side of the architect's office will have to prove that the builders can execute in materials what the designer has expressed by his drawings. For this, working drawings are required.

Working drawings are drawings which will give all the necessary information for the actual construction and finish of work and to enable the builders to take off quantities of materials and to establish prices thereon. These drawings with the specifications form the basis of work required to be executed and the cost thereof and as such become a part of the contract documents between the owner and builder.

A word may here be said regarding the relation of the working drawings to the specifications. The drawings should clearly show what is to be done and the specifications should tell how to do it.

Fixed rules for the making of working drawings cannot be given; each office will have its own particular methods, traditions govern some, daily experience and development control all.

Architectural working drawings can be divided into three general parts, first, the general drawings drawn to a scale of $\frac{1}{4}$ -in. or $\frac{1}{8}$ -in. to the foot, secondly, the more detailed scale drawings, drawn to scales of from $\frac{1}{2}$ -in. to 3-in. to the foot, and lastly, the full size details. On some particular jobs it may be necessary at times to make drawings for the shell of the building only, i.e., the enclosed structure itself, with little or no indication of interior finishes, merely showing rough work as openings through bearing walls, furring in part, chases and rough fireplaces, or other necessary structural conditions which will affect the interior work to be executed under other contracts. Later interior or other work would come under the class of "special finish." Drawings for "special finish" may be prepared by the architect or interior dec-

orators. In the event of the architect receiving the commission to design the interiors, drawings therefor would have to be prepared, (after sketches are accepted), as working drawings.

We are considering at this time the $\frac{1}{4}$ -in. and $\frac{1}{8}$ -in. scale architectural working drawings or "general drawings" as they are sometimes called. Mechanical, plumbing, heating and electrical drawings are so interwoven that they must be considered with the general set. In mentioning drawings, it is generally understood that such drawings will include layouts for plumbing, heating, ventilation, drainage, electrical work, elevator machinery, pumps, etc., all being apart from the general architectural drawings.

On small work and if the mechanical work is not too complicated, such information can be indicated on the general drawings. However, as a rule it is much better to have separate mechanical drawings, thereby avoiding complicated looking architectural drawings difficult to read.

Framing drawings are directly related to the architectural drawings, as such information as footings, columns, girders, beams, trusses, etc., are given thereon and they form the skeleton or bone structure in the anatomy of a building. Simple framing for small buildings may at times be indicated on the general drawings.

Framing and mechanical drawings are usually prepared by technical experts of their own professions, sometimes retained by the architect on the regular office staff, or such experts may be retained as consulting engineers for a particular work.

To the younger draftsman who is given the task of preparing working drawings many words can be said in caution, as a guard against pitfalls: listen carefully to instructions given by the men higher up, give close attention to the work which is to be performed. Remember that if incorrect dimensions are not watched out for, or materials are not correctly indicated and many other careless errors slip by, it is up to the man who made the drawing and a loss therefrom will always be incurred. Be neat, for this counts much. In giving an outline of how to make the general drawings, a few general cautions or "look out" signals will have to be given.

All possible information should be obtained from the sketches. Consider carefully the class, type and purpose of the work, consult with the designer to learn his intent and what materials are to be used.

PENCIL POINTS

Lay out a program, foresee what is to follow step by step. A general questionnaire will help to procure first hand information. This may be gotten up as a memorandum specification or in outline form and will help to answer questions; for example: Are the footings to be of concrete? Is the building of a wall bearing or skeleton construction type? What materials are to be used for the roof, etc., etc.? and so on, obtain necessary information of all important parts, even down to the treatment of the gardens. The architect should himself be consulted and his sanction given.

The architect should obtain a survey of the property on which should be given information as to the size of the plot, intersecting angles at streets or property lines, showing locations of adjoining buildings, giving levels of same, location and depth of sewers, water lines, electric service, etc. On surveys of country properties, contour lines and location of trees are very helpful. In closely built districts where building adjoins building, party walls are often encountered. Such walls are erected to serve two buildings, saving the cost of independent walls for each. These walls are generally centered on the lot line, the wall then becoming a jointly owned wall by the owners on each side of the property line or some other legal arrangement exists. Such party lines would, of course, be shown on the survey. Beware of encroaching walls, projections, etc., over the neighboring properties or vice versa.

With the general information obtained from the sketches and list of questions answered, from the survey, etc., the working drawings are well begun. Some general knowledge of the strength of materials, plumbing, heating and ventilation is necessary. Also to be familiar with some of the principal legal rules or ordinances concerning buildings is very important. Perhaps the best way to begin actual drawings would be to lay out on detail paper the main governing lines such as the property lines, building lines, axis lines, centers of columns, accented doors, windows, etc. Choose the most important plan as a starting point, the plan which governs the principal division of rooms around which the building is designed. For example: see Figure 1 which is the main banking room floor; Figure 3 is the first floor of a country residence; Figure 7 is the typical floor of an apartment house or hotel, etc. For the sections and elevations establish floor lines, building lines, center lines of doors and windows, which of course must agree with the plans. It is a good practice to establish some grade elevation to be known as *Datum* = 0'-0". This may be taken as the first floor or some established point on the curb, in fact, any arbitrary level. From this, all up and down levels can be taken and it is especially useful to the contractor in checking heights from fixed bench marks. Some draftsmen prefer using colored ink for the indication of governing lines as mentioned. It is well to keep the plans, elevations and sections working up together as far as is possible. Use the drawings whereon the governing lines were established for a constant check, in fact, it is best to complete the

entire plan which may be called the governing plan, on the detail paper. On these drawings establish all principal dimensions and mark figures on such clearly. From these drawings, then, can be traced over, or measured off, determining points, as bearing walls, column centers, chimneys, etc., for all other drawings at the same scale required for the job.

All drawings should be made as simple as possible. Avoid unnecessary elaborations. Figures and lettering should be clear and readable and it may be well to mention here, that indistinct figures cause a great deal of annoyance, especially when the prints of the drawings are used in the field where they are more or less handled under severe conditions. Do not jumble up the drawings with detail specification notes,—let the specifications take care of that. However, be sure that all required information in connection with the drawings or notes of materials is distinctly shown. Locate correctly chases in walls as required for mechanical installations. Consult the mechanical drawings (which should be worked along with the general drawings) for sizes and locations of ducts and chases and be careful that these do not interfere with any structural or other work. Especially avoid interference with the framing (drawings of which should be worked up along with the general drawings). Watch out for pipes, girders or columns being exposed where not desired. Check carefully for all interference or confusions between mechanical drawings, framing drawings, and the architectural drawings. Watch out for drainage of the cellar bottoms or other places where water need be carried off from the footings or grades. "Look out points" are so numerous that it will be impossible to mention more than a few. Do not be afraid to ask intelligent questions from the various experts, the chief draftsman, or others in charge, and if necessary obtain outside information from builders or material men (this of course with the office's permission). The boss himself will gladly help.

Final specifications, the general specifications as well as those for the mechanical work, should be commenced when the drawings have been brought up to a point of about 75 per cent. completion. Most likely an outline specification has previously been made. Blue prints should be made for the guidance of the specification writer and it is well to have an office set of prints of finished drawings made while there is still work to be done on other drawings. The blue prints necessary for the specification writer or for the drafting room while the drawings are still in the state of preparation need not be prints of entirely completed drawings, and for general reference around the drafting room or specification department the small cost of having the same drawings printed several times is well worth the expense, as it saves so much wear on the original drawings. Often the original drawings are in a very bad condition, due to being handled around the drafting room, before prints are issued to the contractors for estimating or erecting purposes.

Whether or not the final drawings should be

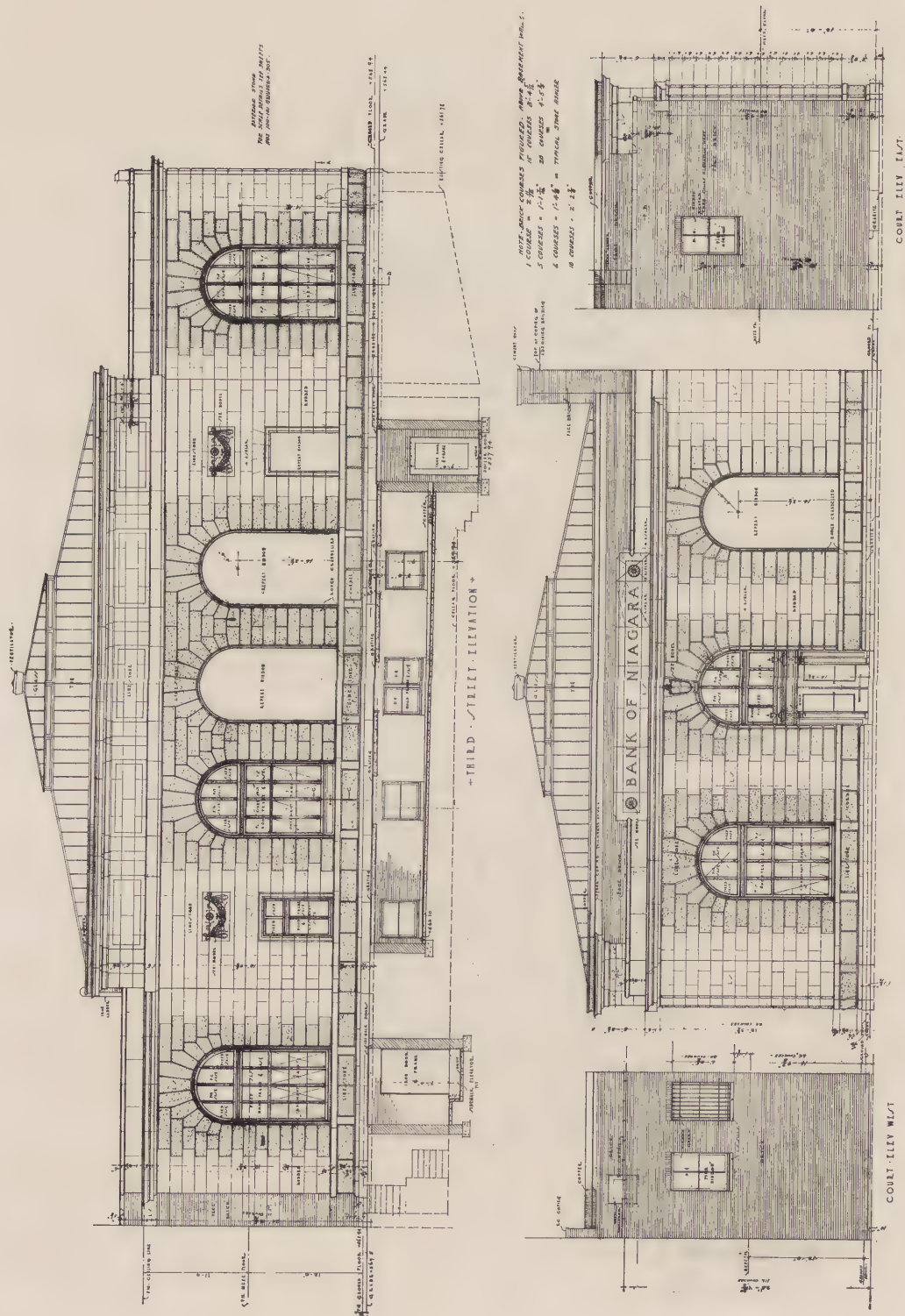


Figure 2. Elevations of Bank of Niagara, Niagara Falls, N. Y. Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

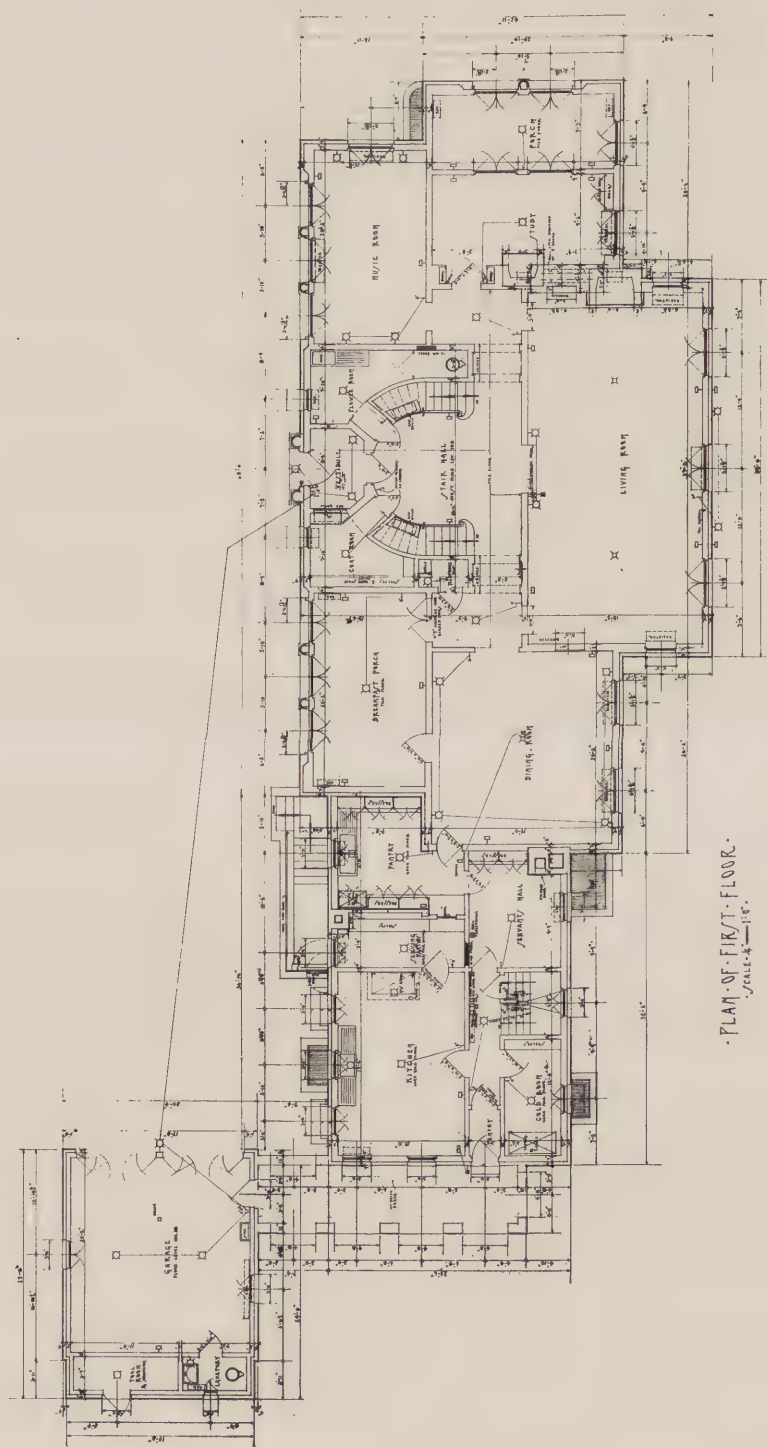


Figure 3. Plan of First Floor. Residence for Mrs. R. G. McGregor, New Rochelle, N. Y.
Shreve, Lamb & Blake, Architects.

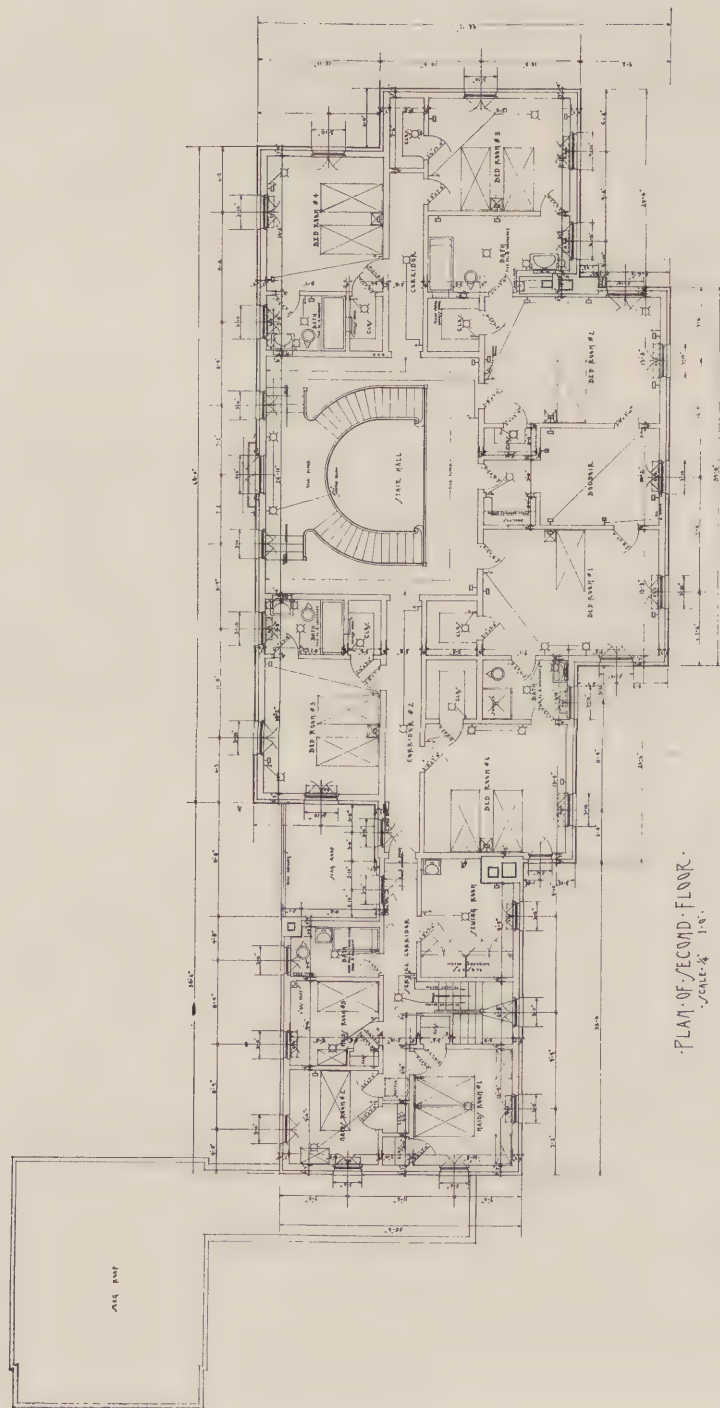


Figure 4. Plan of Second Floor. Residence for Mrs. R. G. McGregor, New Rochelle, N. Y.
Shreve, Lamb & Blake, Architects.

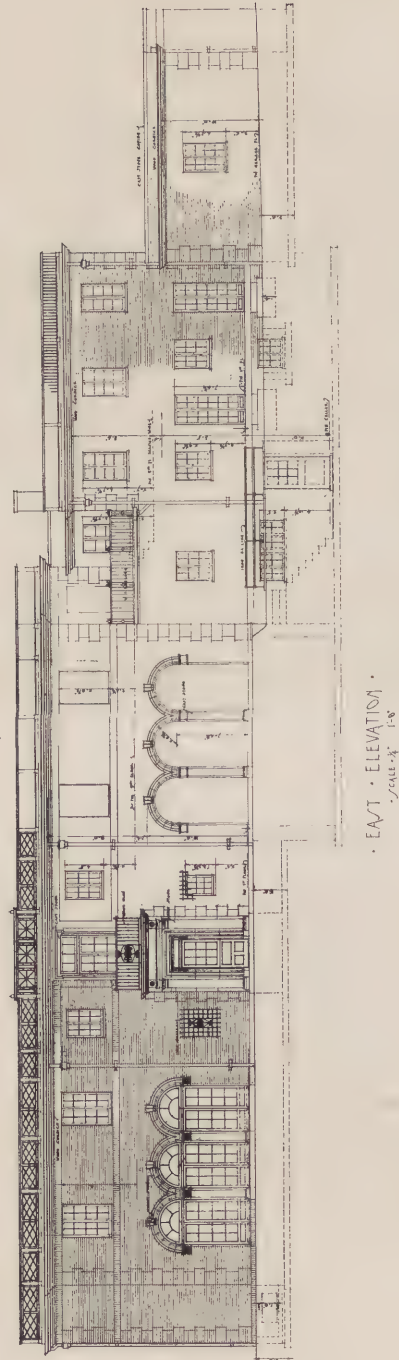


Figure 5. East Elevation. Residence for Mrs. R. G. McGregor, New Rochelle, N. Y.
Shreve, Lamb & Blake, Architects.

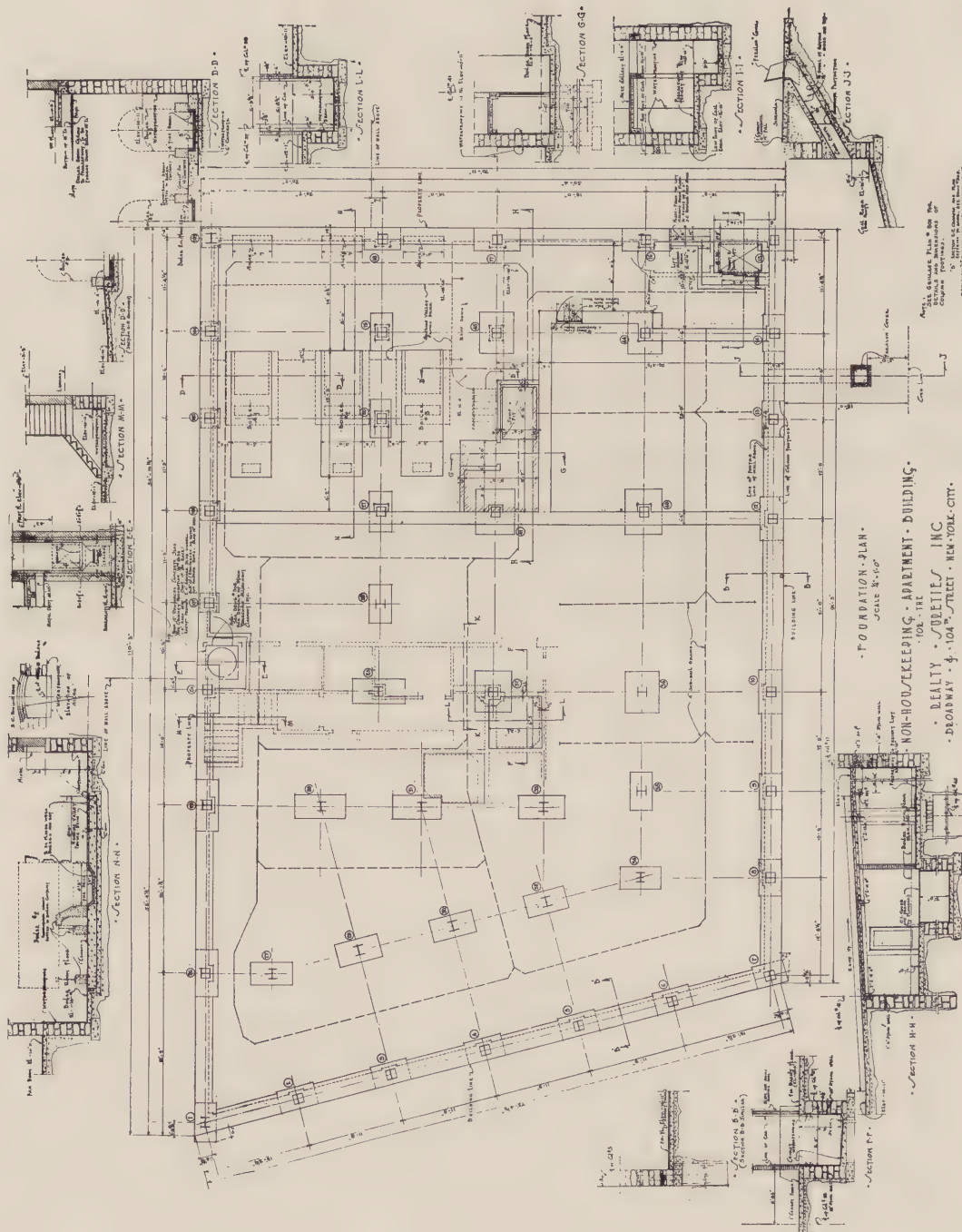


Figure 6. Foundation Plan, Non-housekeeping Apartment Building for Realty Sureties, Inc., New York City. Carrere & Hastings, Architects. Shreve, Lamb & Blake, Associated.

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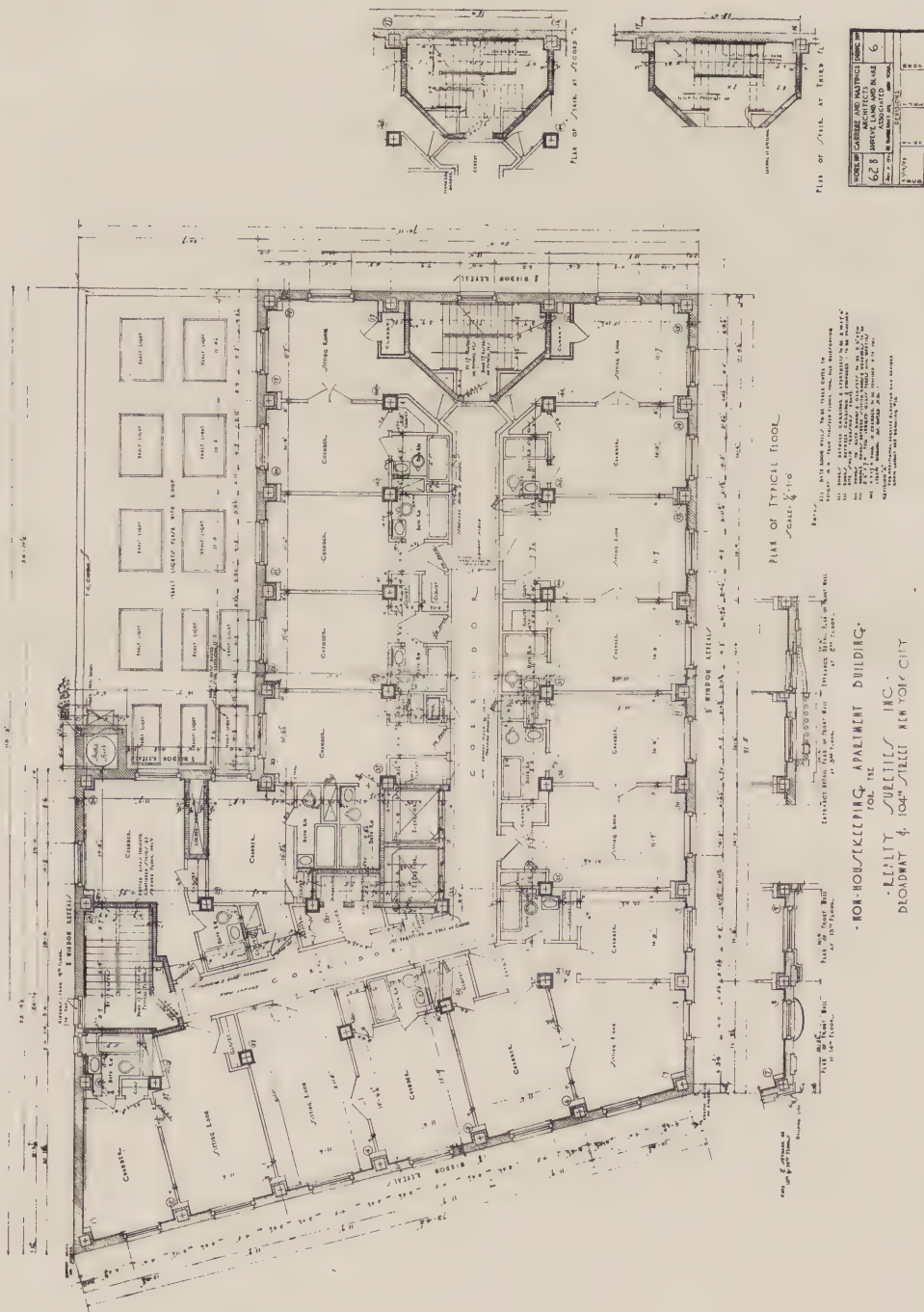


Figure 7. Plan of Typical Floor of Non-housekeeping Apartment Building for Realty Sureties, Inc., New York City. Carrere & Hastings, Architects. Shreve, Lamb & Blake, Associated.

Figure 8. Steel Framing Drawing for the Typical Floor of Non-housekeeping Apartment Building for Ready Sureties Inc., New York City. Carrere & Hastings, Architects. Shreve, Lamb & Blake, Associated.

Figure 8. Steel Framing Drawing for the Typical Floor of Non-housekeeping Apartment Building for Realty Sureties Inc., New York City. Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

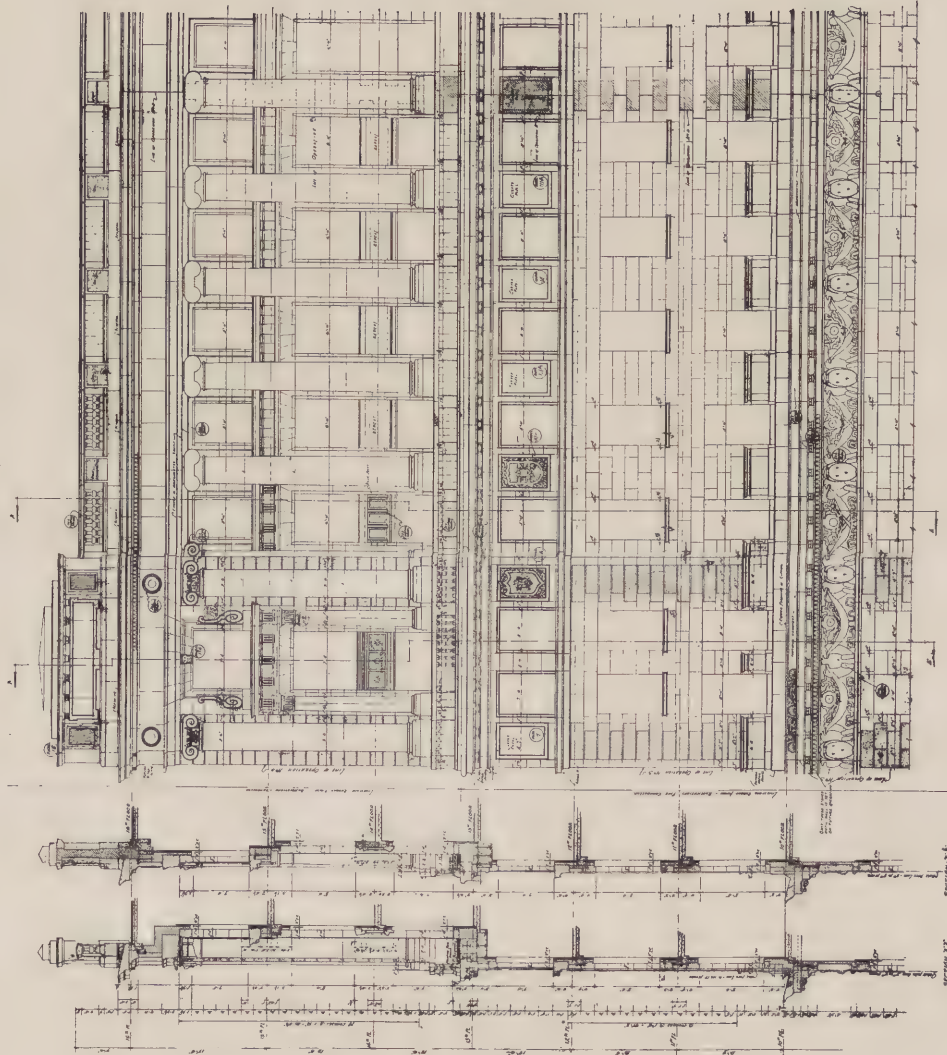


Figure 10. Elevation on Broadway, Building for the Standard Oil Company, New York City. Carrere & Hastings, Architects. Shreve, Lamb & Blake, Associated.

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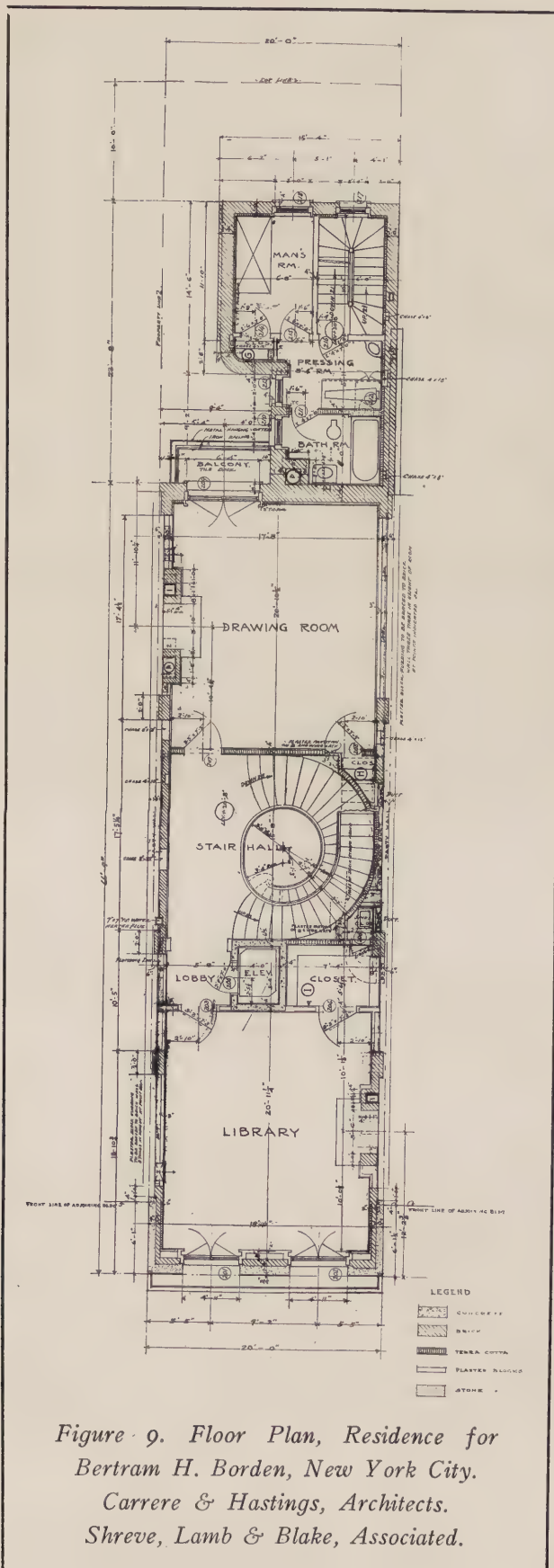


Figure 9. Floor Plan, Residence for
Bertram H. Borden, New York City.
Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

traced on paper or cloth depends entirely upon the practice of the office. For small jobs, tracing paper drawings may be satisfactory, but for larger work and where drawings are to be handled often, the drawings ought to be traced on cloth.

After all architectural, framing, and large mechanical drawings and all specifications are completed—some large scale drawings showing important features are usually necessary, no mention however will be made regarding large scale drawings in this article—it is then most necessary to check the entire set of drawings. See that all notes and indication of materials, as called for in the specifications and mentioned “as shown on drawings,” are shown, etc. Check all framing and mechanical work with the general drawings, check dimensions carefully. For checking it is best if possible to have a complete set of prints of all drawings, and complete specifications. Ring errors with red or yellow pencils. Some hints of troubles which it may be well to guard against have been mentioned in foregoing paragraphs. When the checking has been completed and drawings corrected accordingly, the working drawings are ready to be blue printed and issued with the specifications to the builders for estimating or erection purposes.

It is necessary at times to prepare outline working drawings and specifications as a basis on which to obtain preliminary estimates. If this is required the working drawings should be prepared in the same general way—possibly to be used as contract drawings later.

Complete detailed information of materials and dimensions need not be so fully shown. A general outline specification would also be required. It is well to bear in mind that outline estimating drawings and specifications may at any time have to become completed working drawings.

The principle of preparing all working drawings, whether for a large operation or for a simple cottage, is the same: do not take it for granted that the builders can interpret your intentions correctly unless clear and distinct drawings are prepared.

The illustrated figures will perhaps help to give suggestions for the presentation of drawings, indication of materials and methods of figuring.

Figure No. 1 shows the plan of a medium sized bank which gives a fair idea of a working drawing for estimating and erection purposes. Materials are indicated by various lines and dots. A key to material is given on the drawing, over all dimensions are given, detailed figures were added before actual construction was commenced, sizes of windows, piers, etc., were completely figured on larger scale drawings—point of the compass is given. Note that a portion of the westerly wall is a party wall—no detailed indication is made of the general interior treatment more than to indicate floor finishes; this assists in some measure as a guide for the general character of the rooms. The plans for this particular building were drawn to the scale of $\frac{1}{4}$ -in. to the foot—the sections were taken on dot and dash lines marked “A” “A” “B” “B” etc.

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Figure No. 2 shows the elevations of the same bank. This is an excellent example of what information is required on an elevation. Vertical stone joints are figured. A few windows are completely drawn to show type—the remaining being marked "repeat window." The floor lines are shown in relation to the elevation and are figured, floor to floor. The floor levels with stone courses can readily be obtained.

Figures No. 3 and 4 are plans of the first and second floors, respectively, of a country residence. These drawings are very simple in presentation and easy to read, much information however is given—the sizes of all doors noted, the electric outlets located. Radiators and registers are indicated, etc. All dimensions are given center to center of openings and the openings figured for their over all dimensions. This method enables the builder to determine easily outside locations around the building and enables easy checking—for exterior and interior work—interior dimensions are given rough to rough.

Figure No. 5 is one elevation of this residence. The general scheme of indication is the same as for the plans, very simple in treatment, materials clearly indicated, depth of footings shown, etc.

Figure No. 6 is the foundation drawing of an apartment hotel. This drawing clearly shows what happens above the grillage beams, the grillage plan however is not shown—the structural steel drawings take care of this. All columns as determined by the structural steel or framing drawing and are shown numbered and figured for location—many interesting sections through various levels, elevators, pits, sump pit, boiler foundations, etc., are shown by marginal sections, also indicating elevations below *Datum*=0'-0" established by high point of curb. Marginal sections as shown on this drawing, plans, sections and elevations are of great help for the reading of different special points and avoid the necessity of making drawings on separate sheets.

Figure No. 7 is the typical floor plan of the same apartment hotel, no special mention being made of indications. Compare this with Figure No. 8, being the steel framing drawing for the typical floor. Observe how closely the framing of the building and the architectural plans are related. The columns, girders, framing out for elevator and stairway wells and for ventilating and plumbing ducts are well allowed for and clearly figured. Careless checking will cause endless trouble resulting in fouling headroom, projecting girder or beams into shafts giving trouble to plumbing risers, heating risers, stacks, etc.

Figure No. 9 is a floor plan of a city residence built between party walls. It will not be necessary to describe the technique or indication. Note on this drawing that in some cases it was necessary to strengthen the party walls by erecting additional walls and piers against same, also to allow for the bearing of steel girders or beams and to provide necessary spaces for heating, vent or plumbing ducts. Fireplaces are also added to the insides of the party walls. Simple as this plan may seem, this was a very difficult problem.

Figure No. 10 is a very interesting drawing part-elevation and sections of a large operation. The indication of materials clearly shown, numbers and models given—no unnecessary repetition of ornament or other details. The sections are splendidly taken—the stone facing as built up on the face of the building with its brick backing also, terra cotta furring, concrete slabs, fireproofing around beams, sections through the steel framing, where same occurs at the walls, vertical stone joints are figured tying up with the floor levels, etc.

Figures Nos. 1 to 10 illustrate in a general way the preparation of working drawings that come within the average draftsman's field of work. The illustrations are from the office general routine work. To draw comparison as to draftsman-ship would be unfair, the drawings have all served their purpose. Comparisons, however, may be made as to general appearance. For example, Figure No. 1 appears to have more information on it than Figures 3 and 4, still about the same kind of information is given. Remember that the drawing illustrated by Figure 1 was prepared at $\frac{1}{8}$ -in. to the foot, whereas drawings as illustrated by Figures 3 and 4 were prepared to twice the scale. Figure No. 2 and Figure 5, both being elevations drawn at the same scale, it is quite safe to say are equally good. The drawing illustrated in Figure 2 is presented in keeping with a monumental design. Drawing as illustrated by Figure 5 has a more graceful appearance as becomes a country home.

Each draftsman whether he be the boss, head draftsman, squad boss, or man in charge of a job, must decide for himself the best way for the making of working drawings.

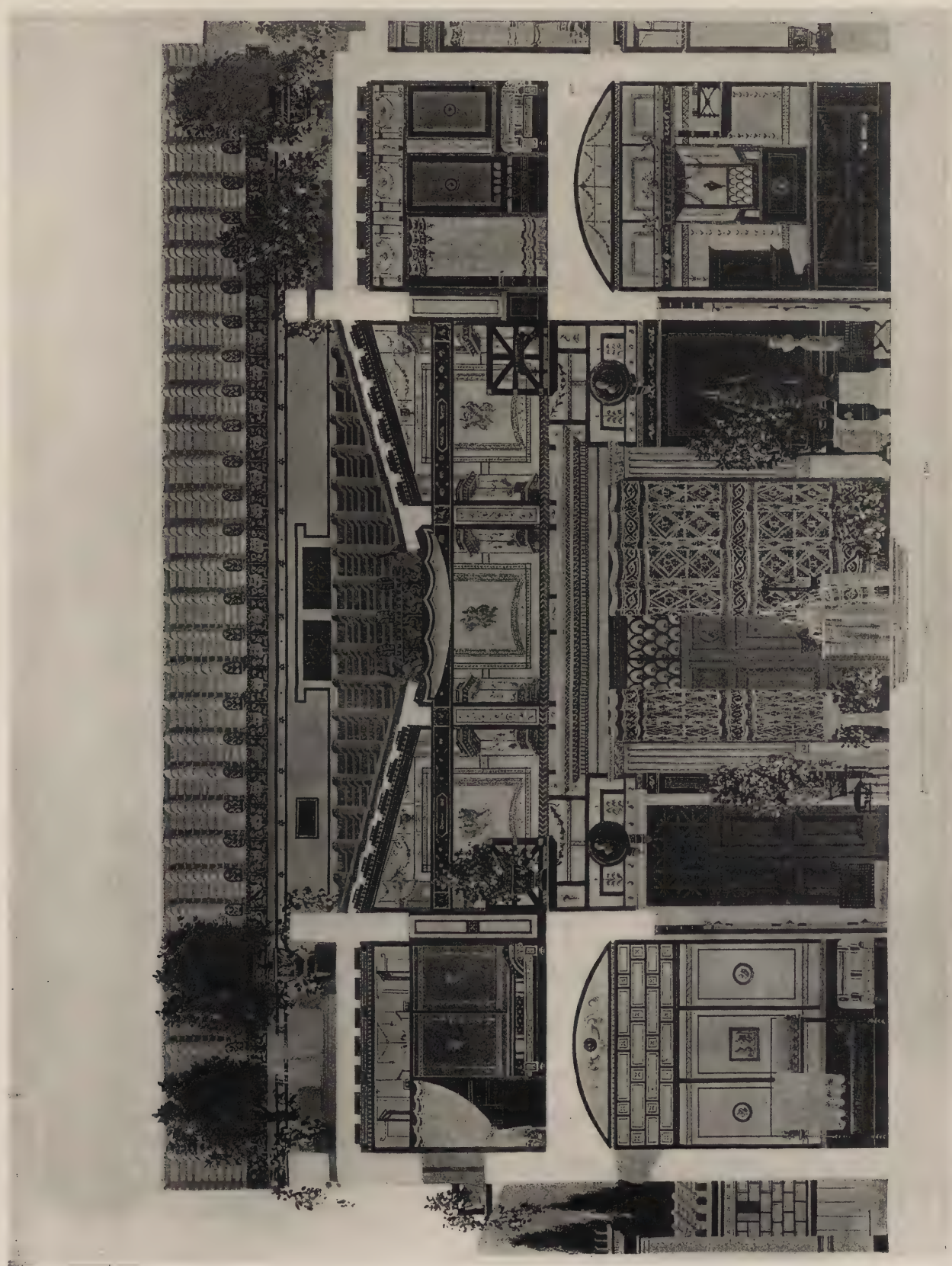
Note—On the figures illustrated with this article many indications of materials, dimension lines, windows, etc., were drawn in light ink, (which is the general practice in many offices). Such light ink lines do not reproduce perfectly. Ed.

VENTILATION

THE Report of The New York State Commission on Ventilation, just published by E. P. Dutton & Company, New York, (Royal 8vo., 612 pages, 134 illustrations; price \$15.00, carriage extra) contains a mass of valuable material on this subject, the result of a carefully conducted series of investigations designed to establish a scientific basis for ventilation practice.

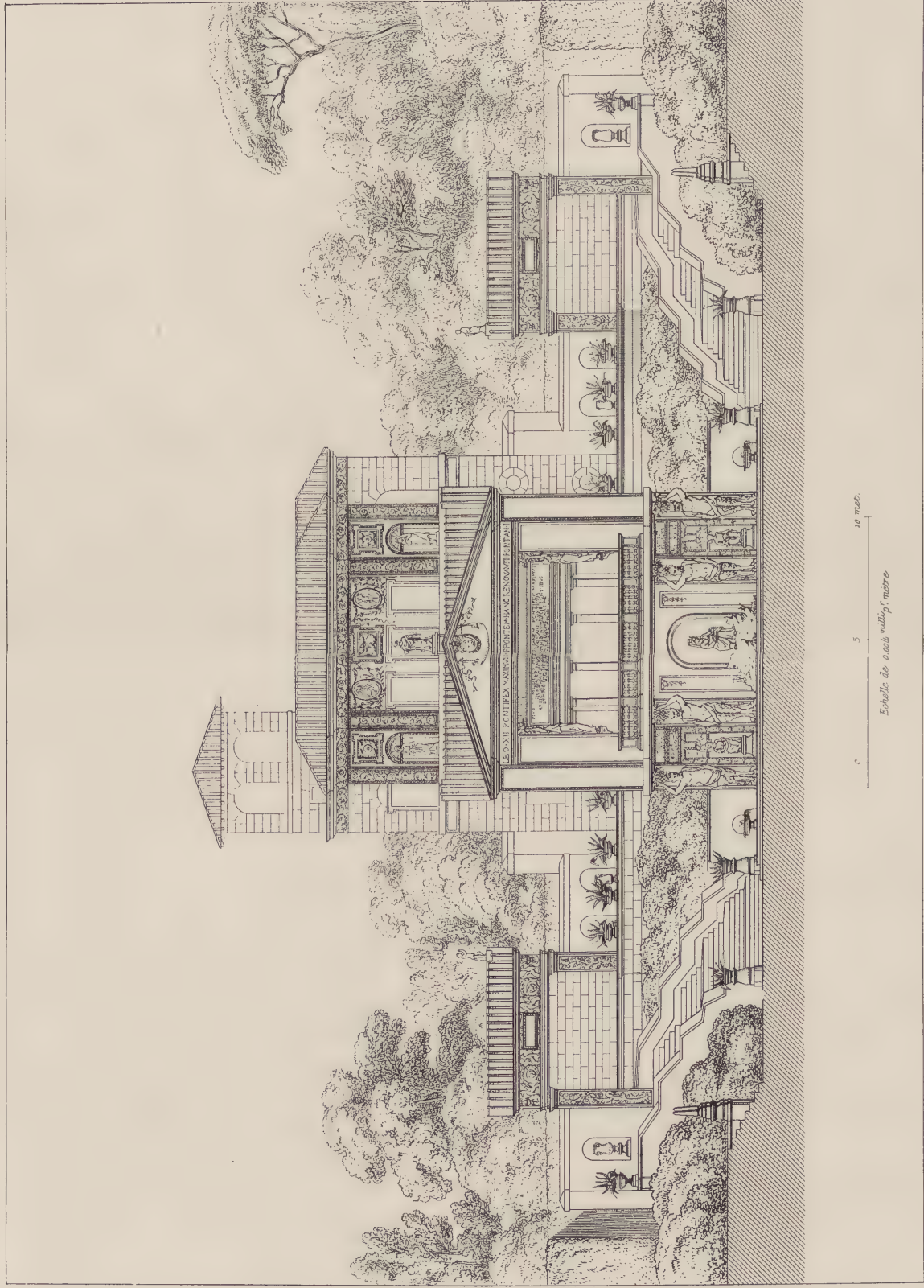
This Commission was appointed by Governor Sulzer in 1913. The members of the Commission were: C-E. H. Winslow, Chairman; D. D. Kimball; Frederick S. Lee; James Alexander Miller; Earle B. Phelps and Edward Lee Thorndike. George T. Palmer was Chief of Investigating Staff and Joseph Hertzstein, Secretary.

The work was done without state appropriation, the entire large cost being borne by The Milbank Memorial Fund, established by Mrs. Elizabeth Milbank Anderson, who was impressed with the need for fuller knowledge of the subject of ventilation as affecting public health and welfare.



HOUSE AT POMPEII, FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE."

On the other side of this sheet is shown a most interesting restoration of a Pompeian dwelling. The charm, and the beauty, of Pompeian domestic architecture are well presented in this plate.



VILLA PIA IN THE VATICAN GARDENS, FROM LETAROUILLY'S "VATICAN."

A plate typical of the most interesting material in Letarouilly's "Vatican" is reproduced on the other side of this sheet. A plan of this particular building, the Villa Pia, was published in the issue of PENCIL POINTS for October, 1922.

PAR M^r CÉSAR DALY, ARCHT^e



DETAIL OF DOORWAY, PERIOD OF LOUIS XIV, PALACE OF VERSAILLES.
FROM CÉSAR DALY'S "MOTIFS HISTORIQUES."

From César Daly's "Motifs Historiques" we reproduce on the other side of this sheet an interesting plate of interior detail. This characteristic doorway of the period of Louis XIV from the Palace of Versailles is admirably presented in this engraving.

MOYEN AGE ET RENAISSANCE

79



DETAIL OF MONTALVO PALACE, FLORENCE
FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE DU MOYEN AGE ET DE LA RENAISSANCE."

A most interesting study of ornamental detail is presented in the plate on the other side of this sheet from H. D'Espouy's "Fragments d'Architecture du Moyen Age et de la Renaissance." The decorative sense and the freedom of fancy displayed by the Florentine creator of these details are well worthy of study.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE
OF DESIGN

THE USE OF PERSPECTIVE IN ATELIER WORK

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, the Class B Plan Problem and the Archaeology Problem in later issues.—Ed.

WE HAVE spoken several times—especially in the chapters on the "Archeo" and measured drawings—of the value of perspective, and of its psychological effect on the jury. The principal use of perspective, of course, is to give a sense of the third dimension more effectually than can be done with a rendered geometrical drawing. It is always more effective in this way to a layman, and frequently also to one trained in the convention of 45 degree shadows and their relation to the projections which cause them. Indeed some architects use perspective very largely in their practice, not primarily for the client, but for themselves. Mr. Charles Z. Klauder is one of these, and Figures 1, 8 and 9 show some of his drawings made for studying a single detail of the Dining Halls at Princeton University. Studies of this sort were made for all portions of the buildings—and many of these perspective studies will never have been shown anywhere outside of the drafting room.

Many students by the use of perspective are made to realize that architecture of any kind does not have one "front" only; that it is

not stage scenery. Many elevations studied just as elevations and without any intelligent working out with the plan and section, are impossible of buildings; things that do not show in elevation however do show in perspective, and by studying with perspective many errors are eliminated.

Of course this does not mean that perspectives always show up faults; far from it. A judicious choice of the point of view, or the clever placing of a group of trees, etc., makes it possible to very much disguise defects—some that could not be so easily hidden in a geometrical elevation.

However, it is one thing to deceive an innocent spectator—even if he be trained in architecture—and quite another to deceive oneself—this is what should be avoided. Of course you want to make the best possible presentation of your design, whether that be good, bad or indifferent—to know its faults will help you in the presentation, as you will make an attempt to hide them from others. If you hide them from yourself, you are due for a hard fall.

Do not be afraid of deceiving the jury; it can take care of itself; but be prepared to take

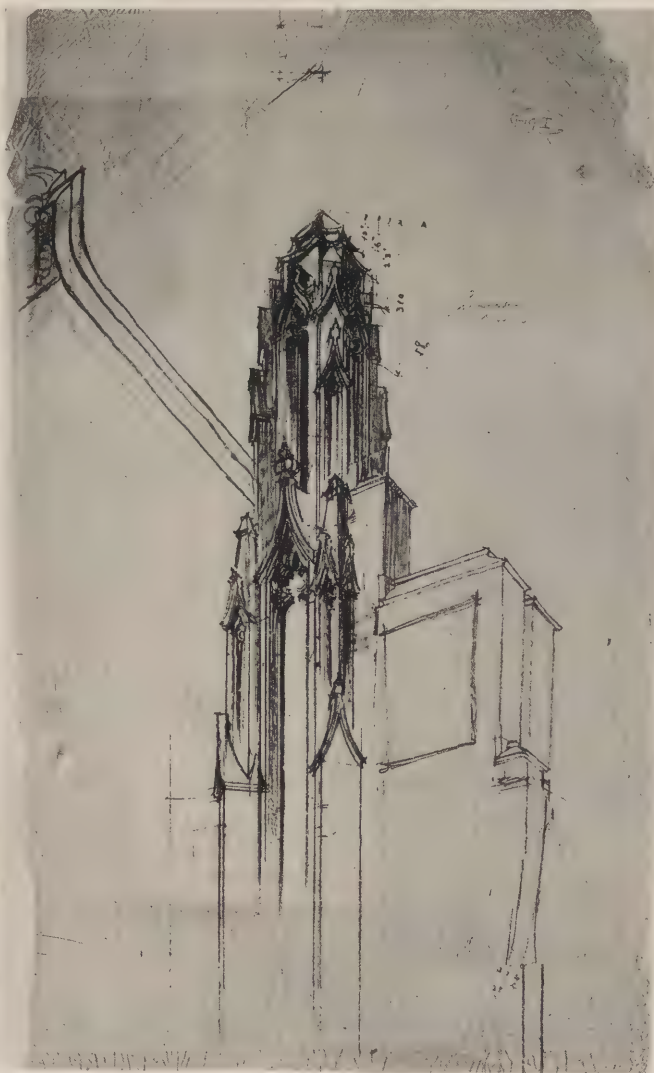


Figure 1. Study by Charles Z. Klauder, Detail
for Dining Halls at Princeton University.

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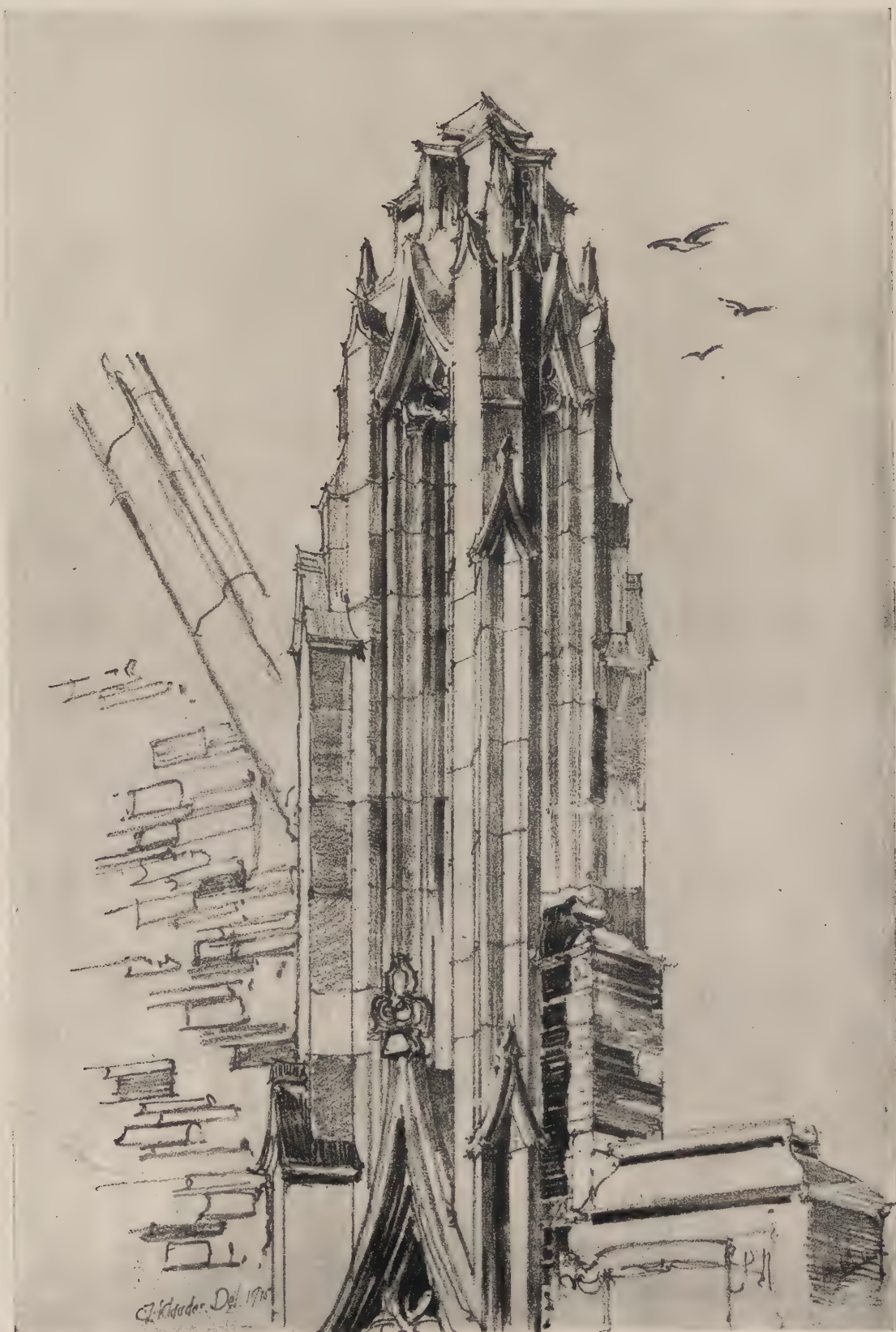


Figure 9. Study by Charles Z. Klauder for Top of Buttress for the Dining Halls at Princeton University, Day & Klauder, Architects. See Figure 1 for Another Study for the Same Detail.

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your medicine if they find you out; the jury asks no quarter—and gives none.

Before making any careful drawing in perspective, it is well to make a few free hand, small size sketches, to help in choosing an advantageous point of view—to decide whether to try to show as much as possible of two sides of a building, or by throwing one side in sharp perspective to emphasize the other;* whether to keep the horizon low, so that most of the horizontal lines vanish downwards, or to have the horizon higher, so that half the horizontal lines vanish up and half down, etc.†

In choosing the point of view these two things especially should be borne in mind. (1) The point from which the finished drawing is to be seen, and (2) the limits of the “visual cone.”

As an archaeo is usually put on a No. 1 mount it must be looked at from at least four feet away—preferably more; as a perspective is absolutely ac-



Figure 4.

curate from one point only, it is well to keep this distance in mind. Then, too, men have a habit of drawing a perspective from a plan and think that if they so place the point of view or “station-point” that a 30 degree angle from it will enclose the plan of the building, all

will be well. If, however, the building is high, this will not be the case, and, too, such an arrangement leaves no leeway for portions of surrounding architecture in the foreground. The visual cone,

**Note.—The latter is usually much more effective. A drawing at about 45 degrees—i. e., showing two sides about equally is usually most uninteresting and even ugly. Try to look at one of your favorite buildings from such an angle and see how unpleasant it is.*

†Note.—Of these two the latter is in most cases very unpleasant. So many buildings are seen from the street—with the eye at, say, five feet above the ground, that what might be called a “second or third story view” is usually unsatisfactory.

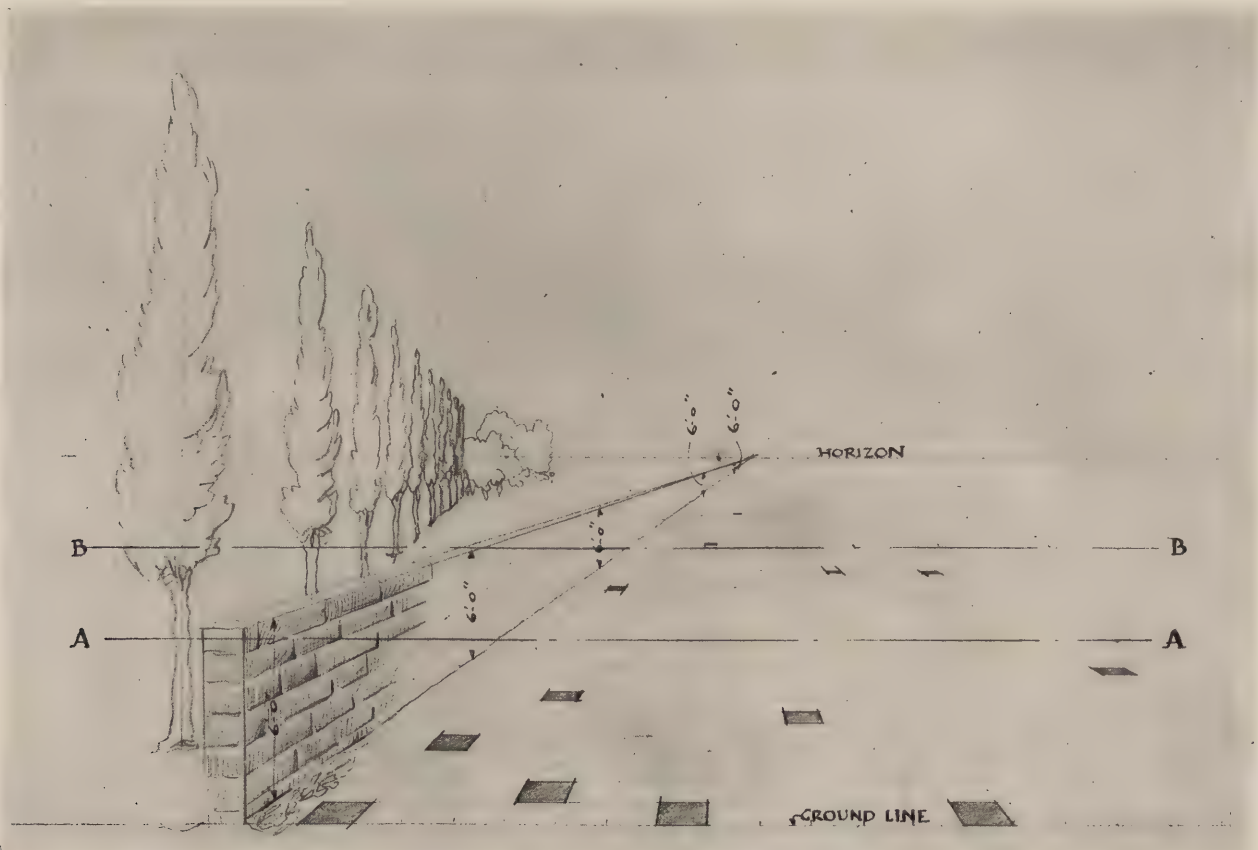


Figure 3. Vanishing Lines and Squares in Perspective.



A Vincent, 4, rue des Beaux-Arts, Paris.

7. Avenue

Figure 6. Design for a Coffin by M. Delaun, Pupil of M. Laloux.
Second Prize and First Medaille. Concours Rougevin.

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Figure 2a, which delimits the "field of vision" on the picture plane, should include everything you wish to show, if there is to be no distortion. Any portion of this field of vision may be used for the "picture." Figure 2b. Having chosen the point of view, and arranged somewhat the composition by means of small and more or less free-hand studies, lay out the "bones" of the perspective—the framework—carefully, even mechanically at the final scale. If you are to trace the drawing—to rub on the final sheet—or if the final drawing will be on a piece of tracing paper that may be mounted—this framework may be done boldly and with a soft pencil. If the work is to be drawn on the final sheet at once, the framing-in must be lightly done, so as not to spoil the surface of the paper or draw lines that require erasure, as erasures ruin an even wash. It will pay to do these framework lines carefully—the finish may be as rapid and "free-hand" as you wish. Any method of perspective may be used—perspective plan or apparent plan. The book of Benj. Lubschez (D. Van Nostrand Co.) is valuable for the purpose as giving just enough information in helping to solve difficult questions, and in a book small enough so that the necessary information may be found easily. Skill in perspective is largely a question of practice—intelligent practice—just as is the case in swimming or any other sport.

One's ability to lay out a perspective rapidly will be much advanced by the practice of sketching in perspective—such things as the returns of cornices, modillions from different angles, and column caps—the things that one wishes usually to put in rapidly and yet with a convincing sureness, rather than to have to work them out labori-



Figure 8. Study by Charles Z. Klauder for Top of the Buttress Shown in Figure 1.

ously to make them appear right.

To acquire this "perspective sense" one should develop particularly two things. (1) The ability to "vanish" lines, i.e.—to carry them toward a vanishing point without having to keep a straight edge against a pin at that point, and, (2), the ability to visualize and draw a "square" anywhere in perspective.

In Figure 3, for instance, the trees vanish, the lines in the wall vanish; and from the checkerboard on the foreground we see that what is in reality a square may take an infinite variety of diamond shapes in perspective, depending upon whether it is in the center, or at the extreme side, whether it is in the very foreground or approaches the horizon, etc. A few hours can be well spent in visualizing the appearance of a square in any position—in vertical and oblique planes as well as horizontal ones. Once you are able to visualize a square anywhere in perspective, it is a simple matter to compare

any object to a square, or to several squares, or in the solid, to cubes.

Once you have the sense of "vanishing lines," it will be easy to carry measurements "into" a drawing.

If the wall of Figure 3 is six feet high, for instance, this six feet can be measured off anywhere along the wall—carried at any point of the wall from side to side, thus giving measurements anywhere within the picture by sliding the six feet around on planes parallel to the picture plane—and of course other dimensions may be laid off by proportion to the known figure.

It is well also to bear this in mind: Suppose you have a foreground as in Figure 3; if you divide the distance from the bottom

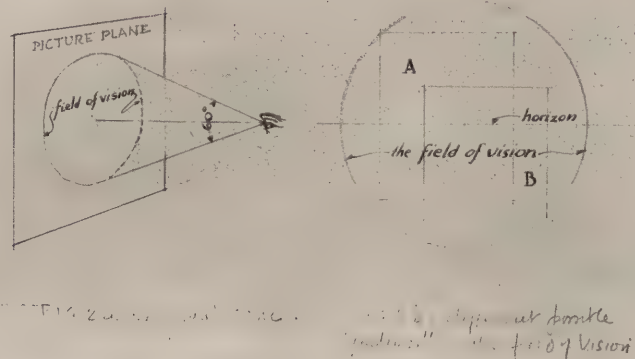


Figure 2a. The Visual Cone. Figure 2b. Different Possible Pictures in the Field of Vision.

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Figure 7. Drawing by M. Aragon, Pupil of M. Redon. Awarded 1er Seconde Médaille in the Concours Rougevin for 1910-11.

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of the drawing to the horizon in half—as by the line “A-A,” the portion of the ground below “A-A” represents *only a few feet*, while the portion above this line to the horizon, extending as it does to infinity, represents *a tremendous distance*. If we divide the space above “A-A” again in half, as by the line “B-B,” we see that the portion nearest to us—between “A-A” and “B-B” is again only a short distance,—a measurable distance—while the space between “B-B” and the horizon is again a tremendous distance. If we should divide this space again in two, we should have the same result. The lower half—the portion of ground nearest to us, is measurable—the part above—farther away from us—too vast to measure. If we now look at Figure 4—a diagram showing a

side view of the spectator and of the drawing, we will understand why this is so. Above the horizon this would be reversed of course; and the same phenomenon takes place on vertical or oblique planes.

Now a word as to vanishing points and vanishing lines. All lines that are parallel to each other and are running away from us, will appear to vanish in a point. If they are horizontal lines this point will be somewhere on the horizon—and we may conceive of the horizon as a series of different vanishing points; each one the place to which some set of parallel horizontal lines will appear to vanish. If we now think of these horizontal lines, as being parts of *horizontal planes*, we

(Continued on page 60)

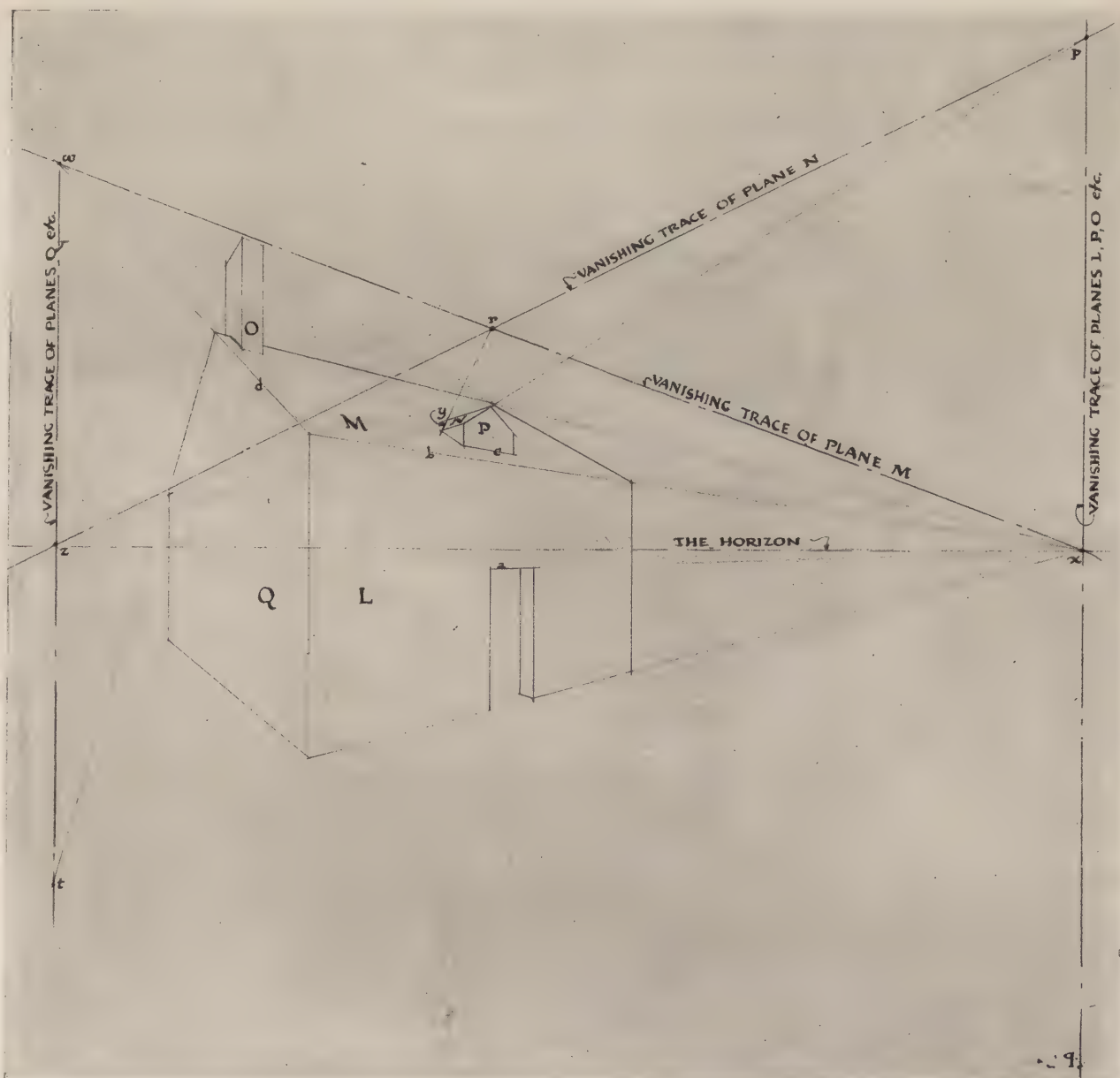
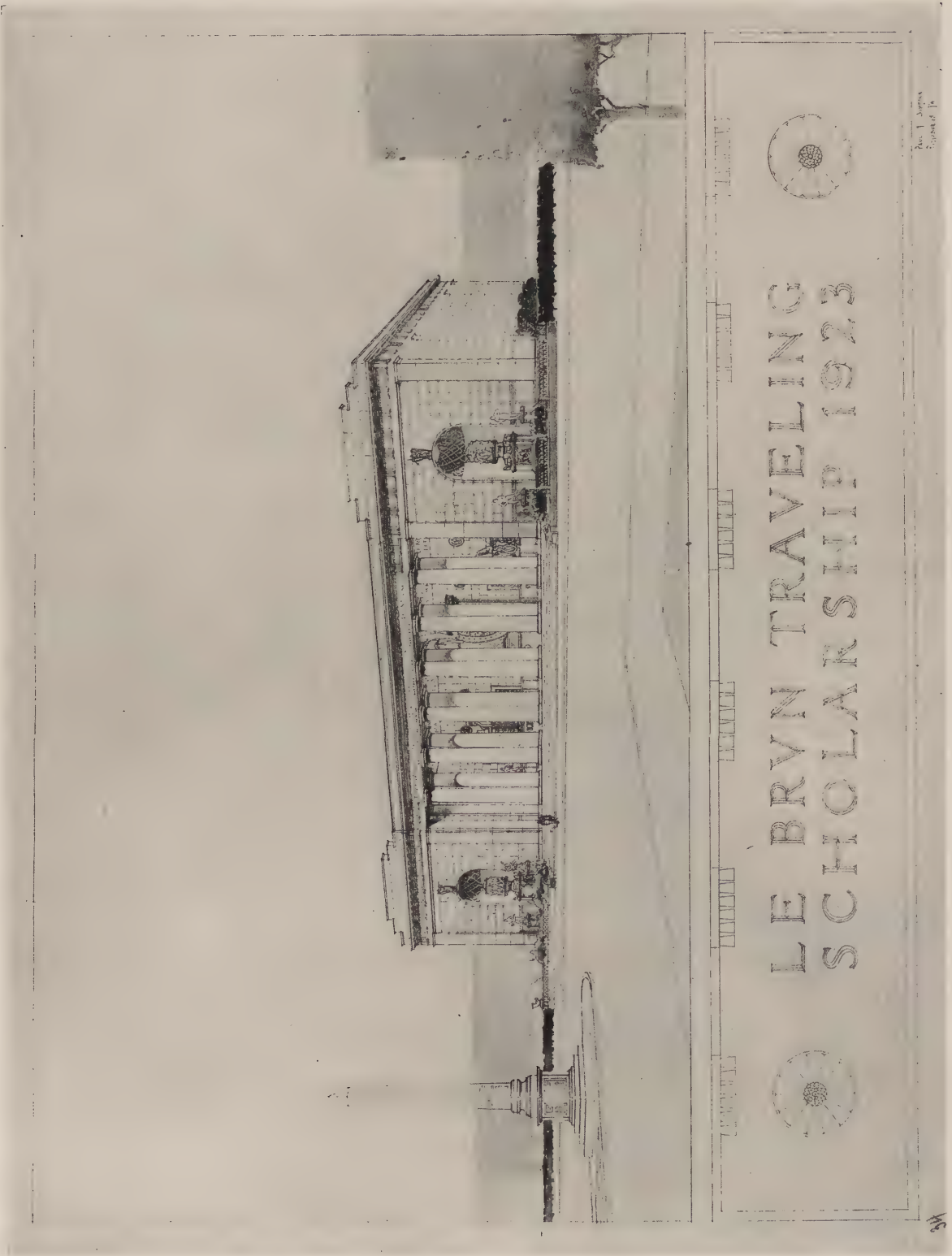


Figure 5. Vanishing Points and Vanishing Lines.

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*Perspective of Prize Winning Design by Paul F. Simpson.
Le Brun Travelling Scholarship 1923.*

AWARDS IN THE LE BRUN TRAVELLING SCHOLARSHIP COMPETITION

THE New York Chapter of the American Institute of Architects has recently announced the award of the Le Brun Scholarship to Paul F. Simpson, of 4921 Forbes Street, Pittsburgh, Pa. Mr. Simpson, who was nominated by Henry Hornbostel, of the New York Chapter, is a graduate of Carnegie Institute of Technology and has been awarded several medals in the competitions of the Society of Beaux Arts Architects. He served with the construction division of the American Expeditionary Forces in France. He is twenty-seven years of age.

The successful competitor will receive an award of fourteen hundred dollars which he is to use to take a European trip of at least six months, devoting that length of time to travel and the study of architecture otherwise than by entering any school or atelier or attending lectures. It is intended that the benefit derived from the scholarship shall supplement school or office experience. The winner must leave before May 1, 1923, unless other arrangements are made with the Executive Committee, and his proposed itinerary must be approved by this committee. The winner will write at least every two months to the New York Chapter giving an account of the employment of his time.

Twenty-five sets of drawings were submitted. The jury, consisting of Messrs. Louis Ayres, John Cross, H. Van Buren Magonigle, Lawrence F. Peck, Egerton Swartwout, Pierre Le Brun, ex-officio, and the Chairman, Julian Clarence Levi, commended the competition upon its high order of excellence, and exceedingly varied solutions of the problem.

The program called for "A Municipal Art Gallery" in a prosperous city of from 100,000 to 150,000 people, which had voted funds for its construction. Through gifts of public spirited citizens the city had become the possessor of a small, well chosen collection of books on art and allied subjects, and the municipal authorities wished to institute a competition for the selection of an architect to construct the building. No particular size, materials or type of architecture were called for, leaving the architect to solve his problem with a free hand. It was to be located in a public park in proximity to a main street that forms one of the boundaries of the park, and at a point where there was no grade—the building with its approach being confined to a space of 190 feet by 250 feet, and freedom being given the architect to make either the long or short axis parallel with the street. Exhibition Halls for Sculpture with an approximate area of 3,000 sq. ft.; for Paintings, 3,000 sq. ft.; and for Decorative Arts, 4,000 sq. ft.; a library, 2,500 sq. ft.;

an auditorium, 2,000 sq. ft.; curator's room, office of administration, toilet facilities, and ample entrance and exit facilities were required.

It was particularly specified, that, in order to make these collections of the greatest use to the public, the building should be so designed that students of art might study freely, and all objects be well lighted and easily accessible. The different galleries, the library, auditorium, etc., should be so related to each other that they would serve their intended purpose without also becoming a means of communication from one part of the building to another. Those portions devoted to painting and sculpture should have overhead light. The library, so that its books might be readily consulted, should have an open shelf room; the auditorium was intended for lectures on art, with a small platform for the speaker.

How well the winning design satisfies the requirements of the program may be judged from a study of the drawings, here illustrated. Mr. Simpson's conception of the plan has the grace and simplicity of Roman architectural planning at its best, while he has also given character to each room according to its use. The directness of access to each unit is most commendable, while the presentation, the mosaics, etc., are good in scale and character. The elevation and perspective are charming in their simplicity—of the Roman Doric style of architecture, with sufficient sculpture, fountains, etc., to add charm and to unmistakably indicate the purpose of the building. The section is a logical exposition of the plan—truly Roman, but well adapted to present-day requirements. Quoting from the report of the jury, "Mr. Simpson's design was one that showed great knowledge, skill and talent. His plan was refreshingly original and showed independence in thought. It fulfilled the requirements of the program in a novel way and if constructed would be very effective in its arrangement. The elevation and section were well studied and in good scale and character. All drawings were simply and well presented. The jury regretted, however, the introduction of the colossal statue in the small forecourt as the only weak point in a sterling design."

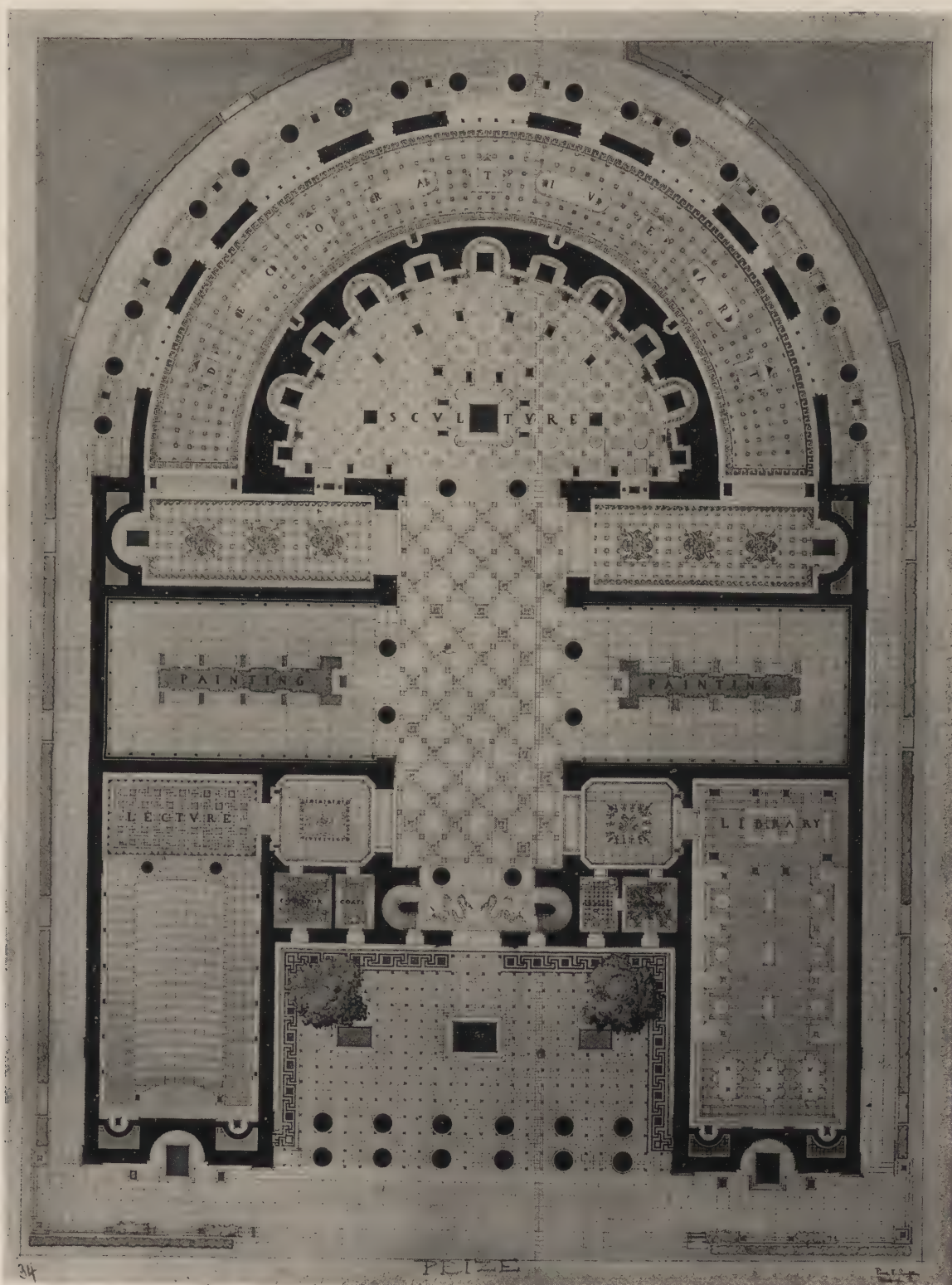
George N. Pauly, of 21 Mawhinney Street, Pittsburgh, Pa., nominated by Harry Sternfeld of the Pittsburgh Chapter, was awarded Second Place, carrying with it the Award of First Mention. Mr. Pauly has had nine years of practical experience and has been a student in Carnegie Institute of Technology. He received a mention not placed in last year's Le Brun Competition. The jury found Mr. Pauly's plan interesting but so sub-divided as to be

(Continued on page 60)



*Elevation of Prize Winning Design by Paul F. Simpson.
Le Brun Travelling Scholarship 1923.*

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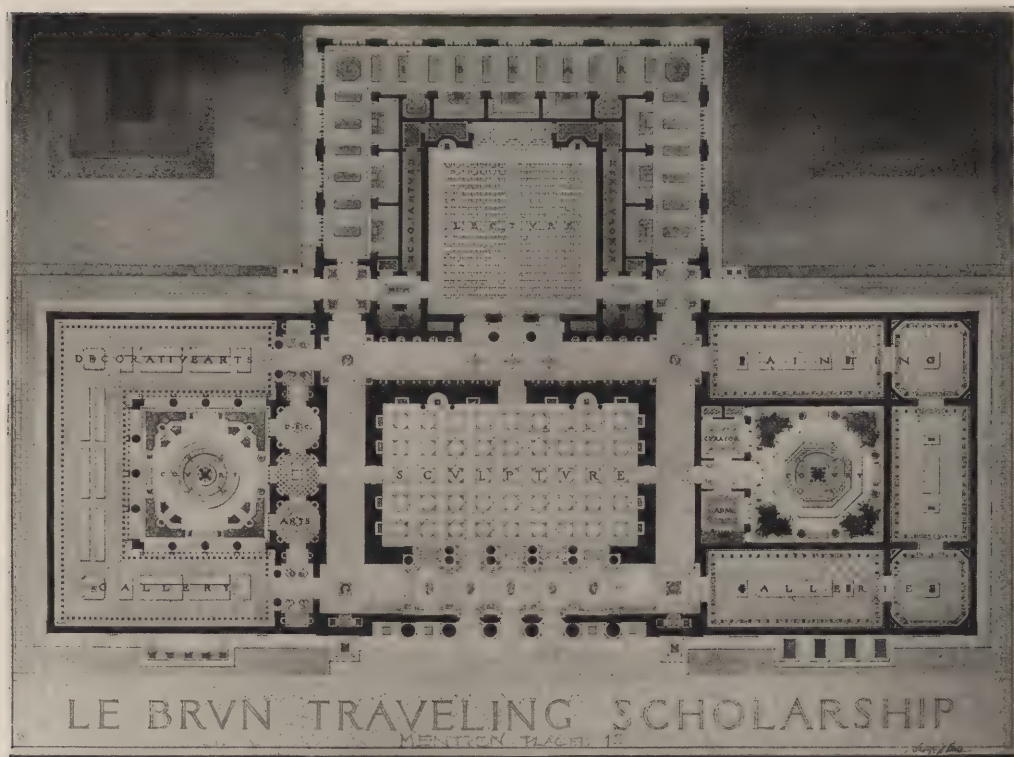


Plan of Prize Winning Design by Paul F. Simpson.
Le Brun Travelling Scholarship 1923.



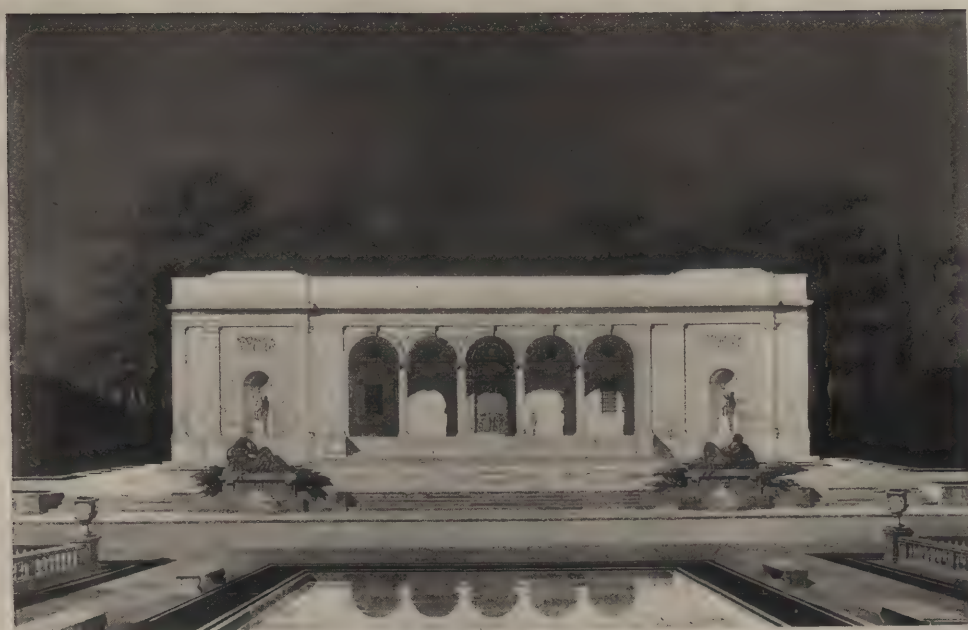
Section of Prize Winning Design by Paul F. Simpson.
Le Brun Travelling Scholarship 1923.

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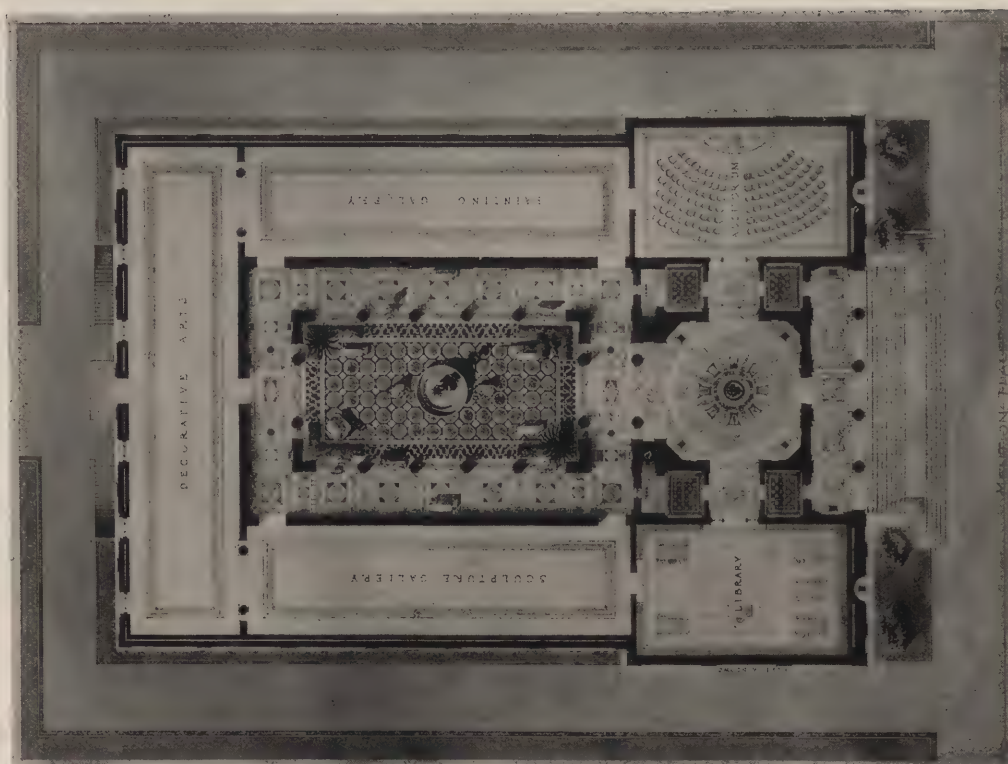


*First Mention. Design by George N. Pauly.
Le Brun Travelling Scholarship 1923.*

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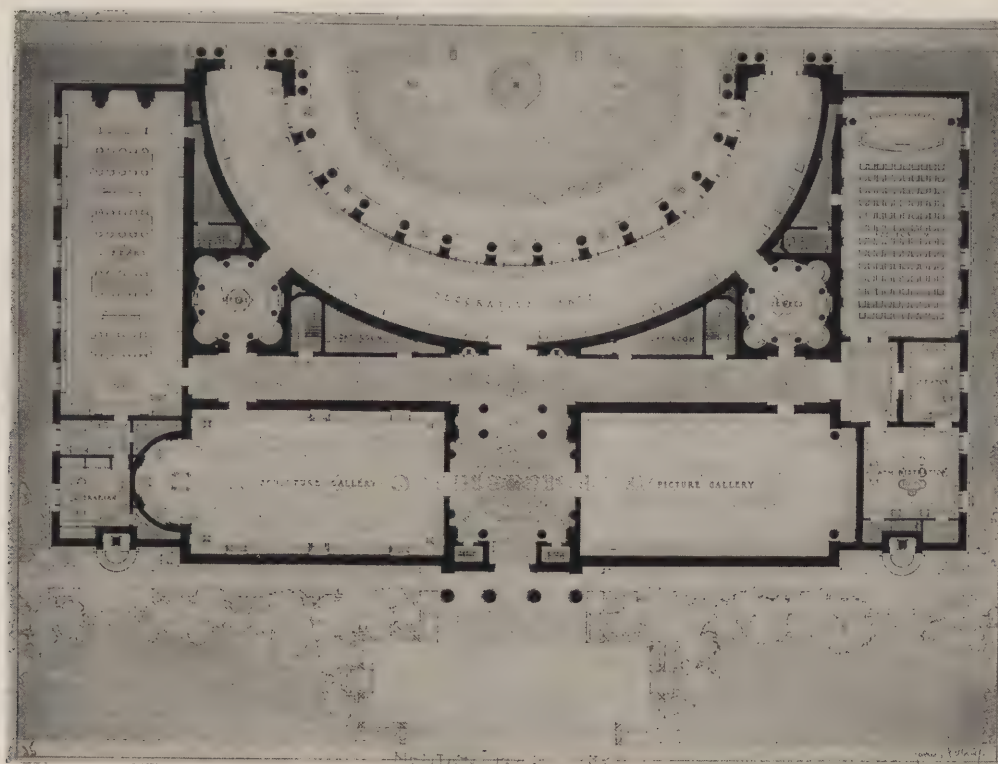
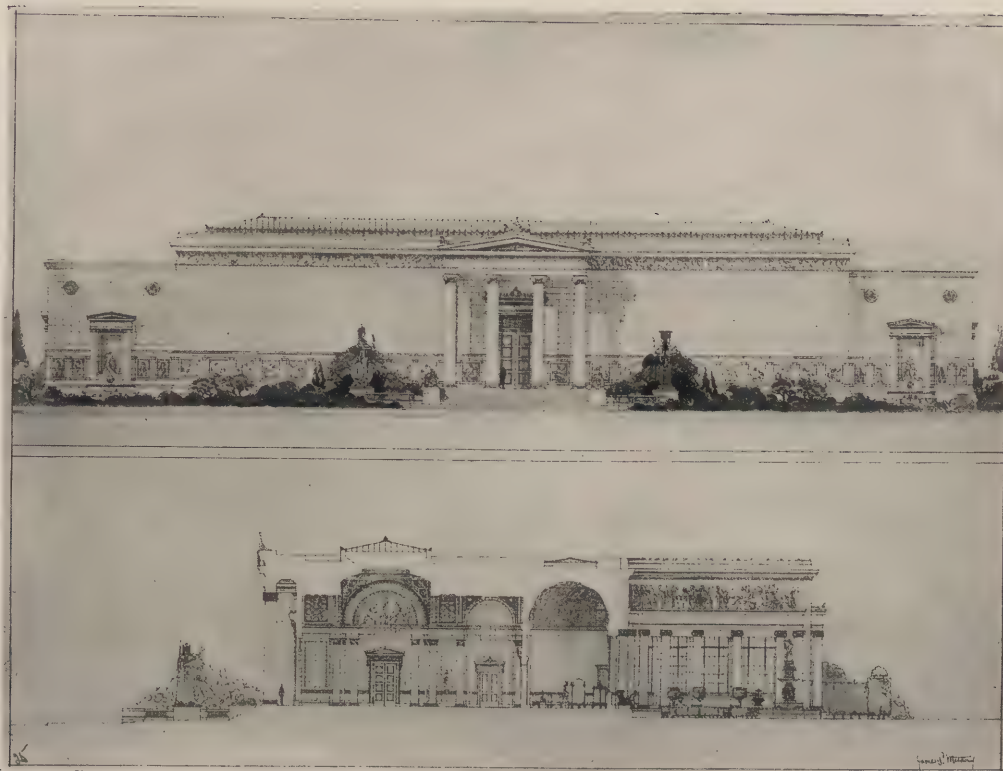


THE LE BRUN SCHOLARSHIP



*Second Mention. Design by Rudolph De Ghetto.
Le Brun Travelling Scholarship 1923.*

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*Third Mention. Design by James Parker Matheny.
Le Brun Travelling Scholarship 1923.*

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ALUMNI MEETING OF THE SKETCH CLUB OF NEW YORK

A PHOTOGRAPH taken at the Nineteenth Annual Alumni Meeting of the Sketch Club of New York is shown on page 59. This meeting was held at Murray's 228 West 42nd Street, New York City, March 31. The members shown in this photograph are as follows: Top row, left to right—Charles F. Winkelman, Arthur M. Duncan, Emil G. Hantsche, Jr., William C. Haskell, James S. A. Mercer, Edward J. Brown, Bernard Jamme, Edward L. Howell, J. Oliver Cummings, Robert Lange, Henry J. Healy, Hobart A. Walker, August J. Rahm, Frederick R. Hirsh, Albert Shonnegal. Row next to the top, left to right—Edgar J. Moeller, Charles H. Fox, William E. Lemke, C. H. B. Hollers, George F. Kiess, James Ross, Charles H. Eckert, Hughson Hawley, William A. Hewlett, Frank H. Quinby, Nicholas W. Hausman, Harry T. Stephens, John J. Petit. On chairs, left to right—Henry B. Herts, William F. Harper, Milton F. Duflocq, Haroldson Bleckley, Julius Harder, Henry C. Van Cleef, A. T. Rose, William J. Blackburn, Edgar A. Josselyn, Fred L. Metcalf. Front row, left to right—Arthur M. Hedley, Emery Roth, Robert A. Greenfield, Henry H. Braun, A. J. Van Suetendael, A. L. C. Marsh, Charles H. Detwiller, Charles H. Darsh, Alex. McC. Welch and Otto J. Gette were present at the meeting, but they are not shown in the photograph.

On page 61 is shown the attractive and timely design for the invitation to this dinner.

CARNEGIE INSTITUTE OF TECHNOLOGY

THE regular faculty at Carnegie Institute of Technology will again be in charge of the work of the Summer School, which opens June 25th, and ends August 17th. During this period courses of six and eight weeks' duration covering a wide range of technical instruction will be given by the faculty employed throughout the college year.

Another big summer school session is predicted at all of the leading universities and colleges, judging from reports already circulating. In anticipation of substantial increase in enrollments, many of the technical institu-

tions such as Carnegie Tech, have enlarged their scope of summer work.

Courses to interest nearly anyone in need of technical training will be given this summer at Carnegie Institute of Technology, at Pittsburgh. The variety of the subjects has been increased by the addition of many new courses, and special emphasis will be placed on these courses that have been outstanding successes of former years. The summer session is, of course, arranged primarily to fill the needs of teachers and under-graduates, but it will doubtless attract many men and women who have found themselves handicapped without the proper instructions and training.

The College of Fine Arts, the College of Engineering, the College of Industries, the Margaret Morrison Carnegie College, and the Division of General Studies are included in the summer program.

Dormitory accommodations will be available for out-of-town students, and in connection with this announcement a substantial decrease in the rates for board and room on the campus, is noted, in comparison with the rates of former post-war years.

Of special interest to readers of this magazine are the courses in architecture. In the College of Fine Arts, courses will be given in Design, Working Drawings and Superintendence of Works, and Outdoor Sketching. In the College of Industries, the Department of Building Construction is offering various courses in Architectural Drawing.

SAINT LOUIS ARCHITECTURAL CLUB.

THE annual election of officers for the St. Louis Architectural Club was held on the evening of April 5th. After the most spirited campaign that the Club has experienced for eight or nine years, the following officers were selected: President, Clemens Nicholas; First Vice-President, Walter Wawrzyniak; Second Vice-President, Charles M. Gray; Secretary, John A. Bryan; Treasurer, Herbert Reinhardt; Members of Executive Board, Carl J. Trebus and Ernest Friton; Trustee, A. A. Aegerter. The other two trustees, whose terms have not yet expired, are Louis La Beaume and William A. Hirsch.

The Club membership now numbers 220; and the recently acquired additional building, facing Washington Avenue at Culver Way, will be remodelled and furnished in time for the opening of the coming fall and winter season. The money necessary for the purchase of the additional building was subscribed by the members of the Club.

AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of The American Academy in Rome from Mr. Frank P. Fairbanks, Professor in Charge of the School of Fine Arts, we quote the following:

We are fortunate in having the approval of the Trustees for carrying forward the plan for obtaining permission from the owners of Italian Villas to permit the Academy to issue to students of the Fine Arts, and others properly qualifying for such a privilege, a book of free admission to the most noteworthy shrines of Villa Architecture in Italy. The idea is to assist the owners to avoid an endless stream of correspondence from personal applicants, and to provide for a blanket grant to visit, for those students of bonafide standing, while at the same time avoiding for our own Fellows a continual interruption of their work by requests for the latest method of entrance to these Villas. If the owners will now co-operate with us, we can fulfill an excellent service for all concerned. Mr. Griswold, our Landscape Architect, who from necessity has been forced to evolve this excellent scheme, is to handle the initial correspondence.

The program for the collaborative problem has, up to this year, been furnished us from New York, to provide for as even a distribution of interest in the problems for architect, painter and sculptor as is possible. These

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problems have quite naturally been predominantly architectural. In order to give the painters and sculptors the initiative in their chosen fields, a plan has been desired to fill such a requirement. Next year, the senior architect, painter and sculptor will select his own problem, and frame a program for his team which will permit him to solve a problem that may be conceived as mainly pertaining to his own particular profession, giving at the same time some scope for the other collaborators. The judgment and successful award for a competition among three teams treating different subjects will naturally be a difficult one and require an adjudication almost entirely on the purely collaborative merits with which the individual problem has been met.

Of the work of the Fellows, J. K. Smith, senior architect, has had to postpone his work, temporarily, on his S. M. Del Popolo ceiling by Pinturicchio, and his rendering of the Palazzo Farnese because of a violent attack of "flu." He is now recovering and "carrying on" with his usual vigor.

Ciampaglia and Cecere, senior painter and sculptor, are both at work on new ventures, Ciampaglia with a composition of several figures and Cecere with the execution of kneeling figure of a young girl. The fresco class has begun under Ciampaglia's direction.

Griswold is preparing to lay out his perspective of the Villa Catena, the general plan of which he has about finished. Griswold and Smith, who is collaborating with him architecturally, have met with the most cordial co-operation from the owners of the Villa Catena, the Torlonia family, who put them up for a week at the Villa during

the time that was required to measure the scheme and collate the facts concerning this rather isolated and interesting monument.

Hafner, Schwartz and Amateis, Architect, Painter and Sculptor of the second year, are equally assiduous. Hafner is laying out final full sizes of his model of St. Peter's dome after Michelangelo for which he is now getting preliminary bids. Schwartz is doing a color study of the ceiling of the Sala dell'Incendio of the Raphael Stanza, and Amateis is at work on a nude figure of a bathing girl that is full of charm and great promise in the sketch.

Marceau, Floegel and Stevens, first year Architect, Painter and Sculptor, are an energetic group. Marceau is occupied with his restoration of the Temple of Concord, Floegel on cartoons for a figure composition, and Stevens has been copying the "Afrodite di Cirene" in the Terme Museum.

Charles B. McGrew, Architect on the Scholarship from the University of Illinois, has registered with us.

The first signs of spring have been apparent in sore arms from inoculations and sundry plans for travels. Five of the Fine Arts men are going south and to Greece, all three first year men, Marceau, Floegel and Stevens, as well as Amateis and the visiting Architect Harrison.

Both our Annual Professors, Prof. Faulkner and Prof. Manship, have entered into the life of the Academy in a most constructive manner. Prof. Faulkner has his cartoon and working drawings for the Thrasher-Ward Memorial well advanced. Prof. Manship has returned from doing some children's portraits in Paris.



Photograph Taken at the Nineteenth Annual Alumni Meeting of the Sketch Club of New York.

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THE USE OF PERSPECTIVE IN THE ATELIER WORK.

(Continued from page 49)

will realize that these planes, if continued away from us indefinitely, will appear to vanish in a line—a horizontal line; in fact in the "horizon" which may be called the "vanishing trace" of all horizontal planes.

In the same way all vertical planes that are parallel to each other will vanish in a line, which line will be the "vanishing trace" of these vertical planes. It will be a vertical line, and we may find the vanishing trace of such a set of vertical planes by drawing a vertical line through the point on the horizon which is the vanishing point of a horizontal line which lies in one of these vertical planes.

This vanishing trace will contain the vanishing points of all sets of parallel lines that lie in these vertical planes, just as the horizon contains the vanishing points of all lines lying in horizontal planes (thus in Figure 5, p, q , is such a trace of vertical planes, three of which are L, P , and Q . It contains the vanishing points p, p , and q , of lines lying in those planes).

Thus in Figure 5, the line a is a horizontal line—a line parallel to level ground, that is, and it lies in a vertical plane L —the side of the house. The line a being horizontal will have a vanishing point on the horizon—it may be found by extending the line until it cuts the horizon—(at x . This will be the vanishing point of any line parallel to a —such as b , the eaves, and c on the dormer window. If we draw a vertical line through x, p, q .) we shall have the vanishing trace of the plane L —and of any plane parallel to it, such as P , the front of the dormer window, or Q , the front of the chimney.

Now we shall see why all this is of very great use. Every plane has a vanishing trace, as we said, (and this includes oblique planes such as M and N of course) and any line lying in a plane has its vanishing point in the vanishing trace of the plane; in fact any vanishing trace may be found by drawing a straight line through the vanishing points of two different sets of parallel lines lying in a plane. We make use of this if we want to find the direction of such a line as y , a line in which two oblique planes meet (M and N). Think of it in this way. The line y lies in two planes—if we can find the vanishing traces of these two planes the vanishing point of the line y will of course occur where these vanishing traces cross. We can find these vanishing traces if we work back to lines we know something about—usually horizontal lines are the most useful, as we know they have a vanishing point on the horizon, which can be found by extending the line until it crosses the horizon. To find the vanishing trace of the plane M ; we have one vanishing point of lines in this plane already—horizontal lines (b and c and the top and bottom of O) at x . We need find only one more; the line d , at one side will serve the purpose—because it is in a vertical plane (Q) and we know the vanishing trace of this plane will be a vertical line through the vanishing point of horizontal lines in this plane— $s; w, x$, is then the trace of this plane. If we continue the line d until it cuts this trace, we shall have its vanishing point— w , and that is what was needed to determine the vanishing trace of the plane M . We connect the two vanishing points then— w and x by a line (wx) which is the vanishing trace of the plane M . In the same way we find the vanishing trace $s-p$ of the plane N . These two traces cross at r —which then must be the vanishing point of the line y which occurs where these two planes cut through each other.

This will be much more intelligible if you read it through a second time; if you can understand it, you will find it much more easy to visualize in perspective—and such men as Leonardo da Vinci and Michelangelo found it worth their while to do all sorts of problems in perspective,—and enjoyed the sense of power given them by their success in solving these problems.

From such dry diagrams as Figures 3, 4, and 5, it is interesting to turn to Figure 6, which is a Rougevin second prize drawing at the Ecole des Beaux Arts in Paris. But it was no doubt made over a framework just as diagrammatic as Figure 5.

Drawings in parallel perspective—such as Figure 7, another Rougevin competition drawing—give all the aspect of being in perspective, and yet are, for the most part, elevation drawings. They are much more effective than the elevation alone would be.

The casting of shadows in perspective in another interesting field that should be studied, for in a perspective the sun need not be (preferably will not be) considered always at an elevation of 45 degrees. Some hours spent with Lubschez' book before mentioned—or with Hatton's "Perspective for Art Students" (Chapman & Hall, 1910) will be well worth while—and then, after that,—as much practice as possible.

AWARDS IN THE LE BRUN TRAVELLING SCHOLARSHIP COMPETITION, 1923.

(Continued from page 51)

somewhat out of scale with the requirements of the program. The scale of the façade was likewise forced but the drawings as a whole were well and simply presented and showed knowledge and ability.

Third Place with Second Mention was awarded to Rudolph De Ghetto of 2 South Avenue, Clifton, N. J. Mr. De Ghetto was nominated by Eric Gugler of New York. He is twenty-nine years of age, is in Class A of the Beaux-Arts Institute of Design, and has had six years' office experience. His plan was charming in its simplicity but more usual in type. It was well studied and proportioned, the façade in good scale and character, and very suitable for a building in a park. The perspective point of view was most unfortunate and its presentation not up to the standard of his other drawings.

Fourth Place with Third Mention was given to James Parker Matheny of Pittsburgh, Pa. He was nominated by Eric Fisher Wood of the Pittsburgh Chapter. He is a graduate of the Carnegie Institute of Technology and has had six years of office experience. He served in the Artillery of the United States Army for twenty months during the World War, of which twelve months was overseas. According to the jury, Mr. Matheny's plan was very interesting and distinctive. He made a serious attempt to express the relation of the building to the park, which led to complications in plan and elevation, which were not solved as successfully as were the other problems. The elevation, however, was good and with sections and perspective, was well presented.

STUDY TOUR FOR ARCHITECTURAL STUDENTS

AN OPPORTUNITY to study the development of architecture in Europe this summer under Professor Albert C. Phelps of the College of Architecture, Cornell University, will be offered by the Institute of International Education, for Professor Phelps will be a member of the faculty of the art students' tour which has been organized for the summer of 1923.

The group will sail from New York, June 30, 1923, on the Cunarder "Saxonia". Professor Phelps will lecture each day of the transatlantic voyage, as a means of sketching in the broader outlines of the development of architecture and of preparing for the more specific lectures to be given during the land portion of the trip. His lectures on shipboard will be illustrated with stereopticon slides from the collection of the Cornell College of Architecture.

After landing at Cherbourg, the group will visit Paris and Versailles, Rome, Perugia, Assisi, Florence, Venice, Milan, Ghent and Bruges, Brussels and Antwerp, the Dutch cities of Amsterdam, Haarlem and The Hague, and finally England. The return voyage will be by the "Saxonia", due to arrive in New York, September 4. Full information can be had by addressing the Institute of International Education, attention of Mr. Irwin Smith, 30 East 42nd St., New York City.

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THE TESTING AND CARE OF DRAWING INSTRUMENTS

By ROBERT GRIMSHAW

THE importance of seeing that the drafting room equipment and instruments are accurate and are kept accurate need not be dwelt upon here, but a brief statement of the ways of testing and caring for drawing instruments may prove useful.

Among the instruments and accessories upon which the draftsman's ease of working and the accuracy of his results depend, are, of course, the drafting board, the T-square, the triangles and straight edges and the various hand tools such as bow-pens, "wholes and halves", etc.

The board, to commence with, should have (1) four equal angles which would, of course, make them ninety degrees each; (2) have all its edges straight, out of wind and smooth; (3) have at least one working surface perfectly flat, that is to say neither convex, concave nor twisting; (4) be hard enough to resist denting; (5) be soft enough to take the thumb tacks easily; (6) be close pored so as to resist dirt and (7) unless purposely used vertically or slightly inclined to the horizontal, be perfectly level.

Its angles are best tested with a large machinists' metal square, metal squares being the only ones that are reliable for angular measurements. Where the board is thick, care should be taken to keep the surface of the square either in, or parallel to, the plane of the board.

Testing the rectangularity of the board by measuring the diagonals with straight, stiff, tough paper strips is sometimes deceptive. If the diagonals are of different lengths

it is always proof that the board is out of square, but they may be of equal length if two sides are parallel and the two adjacent angles connected by one of these sides are equal, as in any trapezoid.

Straightness of the edges (as distinguished from absence of twist) should be measured by a straight edge, preferably of metal, of known correctness. This should be applied lightly, edge on, and the accuracy of contact judged against a strong light.

The flatness or "truth" of the surface can be tested by a long straight-edge applied lengthwise, crosswise and diagonally.

The hardness is tested by thumb tacks.

If the board is to be used in a level position, it should be absolutely level in order that even a round pencil may not roll off when laid thereon lengthwise, crosswise or diagonally. (But no draftsman should use any but a "hex" pencil, if he can get one.)

On every drawing board there should be a distinctly scribed horizontal line and a vertical one, to be used from time to time for test purposes.

Centre lines on drawings are preferably made by a needle point just sharp enough not to scratch the paper or the board. This applies to lines on regular drawings as well as to those used in testing.

Where work has to be done on a board that is not perfectly rectangular, only one edge, preferably the left-hand one, should be used with the T-square and all lines perpendicular thereto made either by the use of the triangle or by geometric construction.

The T-square should be tested for (1) rectangularity of both angles, unless the blade, being very long, is purposely tapered in width, in which case the top angle only should



Design for Invitation to the Nineteenth Annual Alumni Meeting of the Sketch Club of New York.

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be tested; (2) for parallelism of the two edges of the blade (with the exception above noted); (3) for straightness of the edge; (4) for smoothness of edge; (freedom from nicks, dents or roughnesses due to ink deposits.)

Its rectangularity may be proved by drawing the longest line possible with the head firmly pressed against the board, then taking the metal L-square to test the angle, the metal square being pressed against a straight edge, the flat side of which is pressed against the left-hand edge of the board. If the T-square has a parallel blade, both angles should be tested.

Parallelism may be tested by drawing a long line against the top edge of the blade, moving up the square so that the lower edge coincides at one end of the line and scribing a second line; the two lines should coincide through their entire length. (This does not, however, prove straightness, as the blade might be bowed.)

Straightness is tested with a straight edge, preferably of metal, the contacting edges being held against the light and the straight edge shifted lengthwise along the T-square blade.

It is well never to use the under edge of a blade. Where it is set on, not let into the head, and the upper edge gets injured, the blade may be removed and replaced in reversed position, the old lower edge becoming the top.

The longer the head of the T-square, the less the liability there is of doing incorrect work with the instrument.

The forty-five degree triangle should be tested for angularity by scribing a perpendicular line while it is pressed against the T-square blade or any other straight edge, then turning it the other side up (that is, flopping it over) and seeing if the line then described coincides, as it should do, with the first one made.

Its sides should be of exactly equal length, if the points are intact. (It need not be discarded, however, if one or more points are broken off; it will still be useful in cross hatching and the same is true of the sixty degree triangle.)

The sixty degree triangle should permit scribing a line thirty degrees from a scribed line, then placing its long side against this and scribing a third line perfectly parallel to the first one.

The backs of two forty-five degree or sixty degree triangles, or one of each sort, placed back to back, with bases against a straight edge or a scribed line, should coincide.

Wooden straight edges should be tested against a metal one of known accuracy. (For straightness and rectangularity, testing instruments should be of metal; for length

they may prove deceptive on account of their changes due to temperatures.)

All straight edges, metal or other, should be tested in sets of three: A against B and C, and B against A and C, the edges being slid along each other and the contacting lines held against a strong light.

Bow pens should be carefully wiped free from ink after each using. Should they get sharp from corrosion, or dull from long use, the remedy is an oil stone applied on the inside of the blade. The edge should be just sharp enough not to score the thumb nail.

"Wholes and halves" can be tested for accuracy by stepping off ten paces say four inches each from the end of a scribed line, with the wide points then twenty from the same point with the close points; the last points stepped off should coincide to a hair. Truing is necessary, should be done with the long legs, using an oil stone on the outside and testing frequently.

Metal centres with mica insets, used to prevent the divider points from reaming out centres in the drawing, should be thrown away if the mica centre hole becomes worn.

Compass points with shoulders should be used wherever the instrument will permit. In case of accident, they must be repaired by an instrument maker.

PERSONALS.

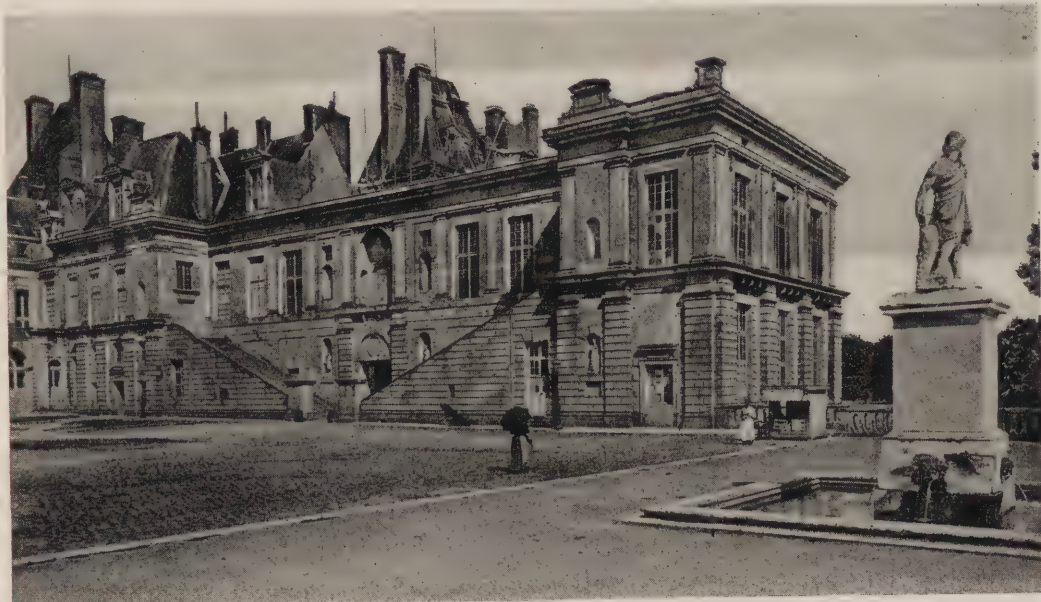
WALTER C. SHARP, W. BROWN FOWLER and RALPH BRYAN are now associates in the firm of Herbert M. Greene Company, Architects and Engineers, Dallas, Texas. The firm name remains unchanged.

JOHN MEAD HOWELLS and RAYMOND HOOD, Associated Architects, have removed their New York office to 18 East 41st Street.

NELSON P. RICE has opened an office for the practice of architecture at 1503 Arcade Building, St. Louis, Mo.

WILLIAM F. STONE, JR., formerly associated with the late Otto G. Simonson, Architect, is practicing architecture with offices at 1122 Munsey Building, Baltimore.

H. G. ANDERSON, formerly with MOWBRAY & UFFINGER, Architects, New York City, is now associated with HARRY LUCHT, Architect, at 242 Fulton Terrace, Cliffside Park, N. J.



The Wing of The Palace of Fontainebleau in Which the School of Architecture Is Being Installed.

PENCIL POINTS



PAUL F. SIMPSON.

PAUL F. SIMPSON, who has just won the Le Brun Travelling Scholarship for 1923, was born at Lima, Ohio, in April, 1896, and received the usual education in the public schools and the Central High School of that town. Graduating in '14 he spent the following two years in one of the architectural offices of that city.

He entered the Carnegie Institute of Technology in 1916 and graduated with an A.B. in Architecture in 1921. His course was interrupted by the war and he spent twenty-one months in the army, seventeen of which were in France with the 53rd Aero Squadron. After 1921, Mr. Simpson went to the office of Mr. Henry Hornbostel. He spent his evenings and spare time since, doing various projects of the Beaux-Arts Institute of Design program and he holds four medals in Class "A."

Mr. Simpson is a member of Tau Sigma Delta, Scarab, and the Pittsburgh Architectural Club. He gives special credit for inspiration to Mr. Harry Sternfeld, and associate faculty at Carnegie Institute of Technology.

Mr. Simpson expects to extend the period of travel and study to a year or more.

MECHANICS' INSTITUTE ARCHITECTURAL ASSOCIATION OF ROCHESTER, NEW YORK.

MECHANICS' INSTITUTE ARCHITECTURAL ASSOCIATION was founded in the spring of 1921 by a few students who visualized the great mutual benefits to be derived from the stimulation of fraternal feeling among the architectural students of the Rochester Athenaeum and Mechanics' Institute, Rochester, N. Y.

Founded for the purpose of developing good-fellowship and personal co-operation among its members, the association hopes that, with the guidance of its faculty adviser, Mr. Hendrik Van Ingen, and the instructor of the Department of Fine Arts, it will help to stimulate a stronger interest in architecture and allied arts, through lectures, sketching trips, outings, etc. During 1922, the

society sponsored a number of successful social events, although handicapped by the loss of a number of members who left the city upon graduation from the Institute.

In the early weeks of the present year, the association's by-laws were revised and changes were made to make provision for the future growth and welfare of the society. Under the able leadership of President Bernard D. Seeley and Secretary Arthur J. Blanchett, fourteen new members have been added since New Years, bringing the total up to thirty.

Great interest in the work has been displayed by the faculty of the Department of Fine Arts and prominent local architects have promised to give addresses on topics of interest in the near future; and with the assurance of close co-operation on the part of its membership, the association confidently looks forward to a banner year of activity during 1923.

COMPETITION FOR TRAVELLING SCHOLARSHIP

A TRAVELLING Scholarship in architecture with special emphasis laid upon the use of interior marble has been announced. This scholarship is to be financed by the Alabama Marble Company and conducted under the guidance of the Committee on Education of The American Institute of Architects.

This scholarship is offered in the belief that such a course of study will result in a better understanding of marble as an available material for interior finish and the opportunity this scholarship affords to study master pieces of architecture and particularly the wonderful marble interiors abroad is an extremely attractive one. It is to be hoped that many men of unusual ability and good educational equipment will enter this contest, as a winner so equipped will profit most from such an opportunity.

The idea of this scholarship is a highly commendable one for it shows an appreciation of the fact that the more an architect knows about a material the more creditable will be his use of it, not only to himself but to the material. What more certain way can there be to promote the proper use of interior marble than to give a well equipped man a travelling scholarship that will enable him to see the best examples?

Details of this contest may be had by applying to Walter D. Blair, Architectural Advisor, 154 East 61st Street, New York City.

THE FONTAINEBLEAU SCHOOL.

THE work of preparing for the opening of the Summer School in the Palace of Fontainebleau is going forward with gratifying rapidity. Mr. Whitney Warren is now in Paris following out the ideas of his brother, the late Lloyd Warren who originally arranged with the French authorities for the school.

Mr. Warren is co-operating with the French authorities in the installation of the necessary equipment and the fitting up of the wing of the Palace of Fontainebleau assigned for the purpose. He is also in communication with the authorities of the Ecole des Beaux Arts in Paris in regard to the course of study to be pursued. Particularly he is co-operating with M. Maurice Fragnaud, *Sous-Prefet* or Governor of Fontainebleau, and with M. Laloux, who is to be in charge of the instruction in architecture. It is particularly interesting to note that M. Carlu is to be a member of the faculty, for he has spent much time in the United States, speaks English fluently, and is familiar with the problems of American architectural practice. M. Carlu was associated with Mr. Lloyd Warren when the latter was head of the A. E. F. School at Bellevue. The presence of M. Carlu should do much to reassure students who may fear that their lack of knowledge of the French language may be a handicap to them in their studies at the Fontainebleau School.

THE SPECIFICATION DESK

A Department for Specification Writers

SPECIFICATIONS FOR CRITICISM.

ACTING on the suggestion of one of our readers, Mr. M. N. Nirdlinger of Nirdlinger and Marlier, Pittsburgh, we have secured a set of architect's specifications for a brick and hollow-tile residence and we are printing this set of specifications in order that they may be criticised by our readers. Last month we printed the first installment and in this issue we continue. The object in doing this is to provide material for a discussion that will be helpful to all who have to do with the preparation of specifications by showing up the weak points in this set of specifications.

You are invited to join in and help rip up these specifications. We are withholding the name of the architect from whom we borrowed these specifications and he has entered into the spirit of the thing so you may feel at liberty to criticise them as severely as you like. We hope that you will also present many suggestions for improvement. The good resulting from this discussion will be in proportion to the number of men who join in with criticisms and suggestions, so we ask that you do not depend on the other fellow doing it but write us yourself, then the thing will be a success. Here is another portion of the specifications—let's have your criticism.

BRICK AND HOLLOW TILE WORK (Continued)

The backing up of outside walls will consist of hard burnt 4x5x12 and 5x8x12 hollow tile. Above hollow tile to be well bonded and in all cases to be free from support on wood. Hollow tile will also be used at pockets, jambs, niches, etc. The general drawings shall be used as a guide for the above work.

Face brick will be tied to hollow tile or brick walls as specified under heading of face brick work.

This contractor will build in all necessary nailing blocks, etc. He will build relieving arches over all openings where especially noted on drawings full width of rough walls. No light colored brick will be allowed in the building. Recesses, pockets, etc., per drawings and details and as directed shall be left for the other trades. All common brick and hollow tile and brick to be well soaked before being laid.

FIREPLACES AND FLUES:

Construct fireplaces, flues, etc., as shown and carry up 9"x9" flues, unless otherwise marked with 9" back walls from each open fireplace, each of which are to have neat arches turned over same. All to be carefully built with all joints slushed full of mortar as each course is laid, and the entire inside of flues smoothly pointed from bottom to top.

Chimneys above roofs will be built with face brick similar to outside walls, of designs shown.

Provide and build in flue rings at all openings in cellar, kitchen and where marked in attic. Build trimmer arches under the hearths at second story den mantel and at first story fireplace. Leave all pockets, niches, etc., for pipes, wires, etc., as per direction. Flues marked with double line to have terra cotta flue lining. Cellar flues in all cases to start 2'-0" below first floor joists. Cleanout flue at living room fireplace will also be smoothly pointed similar to other flues.

This contractor will furnish and install 16"x20" cast iron cleanout door and frame at bottom of ash chute under living room chimney. Said cleanout door to have approved fastener and the bottom of this door to be kept 2'-0" above cellar floor. This contractor will also furnish and install approved type ash chute doors at rear hearth of living room fireplace.

Furnish and put in place —, or approved equal,

adjustable damper the full size of opening at living room fireplace.

FACE BRICK WORK:

The entire front, sides and rear of building shall be faced with a standard brick \$24.00 per M. f. o. b. Pittsburgh, Penna., of such make and color as selected by architect and owner (brick contemplated is a red tapestry standard brick which it is intended shall be laid up with a square struck joint about 1/2" wide, the face of joint being kept flush with face of brick). Chimneys above roofs to be laid up of above face brick and of designs shown and capped with a 2" layer of 1 to 2 cement mortar finished as shown.

This contractor will include string courses, window sills, lintels, arches, pattern work, etc., all as indicated on drawings and per details. Care must be used by brick contractor so that no defective brick or chipped brick are used on the work. The face brick shall be tied to hollow tile back walls with crimped galvanized iron wall ties every fifth brick and every third course and where the design permits and it is possible for the header courses to bond with hollow tile or brick same shall be done. Regarding above specification for crimped galvanized iron wall ties it is assumed same comply with city building laws. If not, brick contractor will substitute wall ties that do comply with city building laws.

Contractor will note face brick work starts 2" below finished grade line on the offset of stone foundation walls. The offset will be provided by stone contractor.

All the above face brick to be laid up in dark red mortar as hereinafter specified. Said face brick work to be laid up from outside scaffold.

At completion of building brick contractor will thoroughly clean all exterior brick work with diluted acid and water.

MORTAR FOR BRICK WORK:

Mortar for face brick work to be composed of best quality lump lime, sharp river sand and tempered with either A—, A—, V— or L— P— cement and best ground color, counting on one sack of cement to the cubic yard of mortar. Mortar to stand three days before being used and shall be tempered as it is used on the scaffold.

STRUCTURAL STEEL WORK:

Furnish and put in place all beams, pipe columns, angle irons, "Z" bars, etc., of weight, size and construction as indicated on drawings. In all cases beams are to have proper size bearing plates and where especially shown bearing beams under same and of proper area size. Pipe columns to be stock pattern and shall have cap and base plates. Where more than one beam is used same must be bolted together with iron bolts, and including standard separators which will be placed at intervals not exceeding 5-feet. All the above steel work to receive one heavy coat of No. 1 quality oxide of iron paint at the mill.

WROUGHT IRON BALCONIES:

Wrought iron balconies to be built at second story windows where shown and shall consist of square bars forming front, sides and bottom and scroll brackets underneath of size material noted on drawings. The square bars will be screwed or riveted into frames and shall be of substantial construction throughout. Same will be anchored to wall with substantial bolts running through full thickness of wall with plates on the inner side. Said plates being installed in such manner as not to interfere with plastering or tile work. The balcony to receive one good coat of metallic paint at the shop. Balance of painting will be done by painting contractor.

PENCIL POINTS

TIE RODS, ORNAMENTAL PLATES AND BOLTS AND COAL CHUTE:

This contractor will figure on three $\frac{1}{2}$ " tie rods that will run down from brick arch at main entrance and at the bottom of the tie rods cut plates $\frac{1}{4}$ " thick per details will occur on the soffit of the brick lintels at main entrance. Said plates will support the stucco circular panel and the brick lintel. Above is clearly shown on drawings.

This contractor will furnish the circular boiler plate coal chute of the form shown on drawings, he to include stock pattern frame and cover at terrace level. The cover to have approved type locking device. The above to be set in place complete ready for use.

TIN AND GALVANIZED IRON WORK:

Cap flash around all chimneys, roofs and decks with material hereinafter specified. Said work to be done in a neat and uniform manner, each step must be uniform. This contractor to include saddles back of all chimneys and the covering of exposed wood mouldings. Expansion joints shall be used throughout for this work.

Roof over one story addition at rear to be covered with material hereinafter specified counting on 14 x 20" sheets with flat seams. The sheets shall be nailed in place with 1" barbed and tinned roofing nails not over 6" apart well under the edge. They shall be well covered up and the seams should be pounded down over the edge. In no case shall nails be exposed.

Tin roof over main entrance hood to be covered with material hereinafter specified counting on raised seams. This work to be done in a careful manner as the workmanship is part of the design. Cap flashings to be used at all roofs where they come in contact with brick or frame work.

Contractors will figure on using S—, M. F. Terne Plates, H— or M— & E— C— "IX" redipped charcoal tin painted on all sides before material is put down and one coat after. Balance of painting will be done by painting contractor.

FLOWER BOX:

This contractor shall include lining of flower box at dining room window with above tin and including three drain outlets at bottom.

GUTTERS:

By reference to drawings it will be noted that hanging gutters are used throughout and this contractor will therefore figure on 5" 16 oz. cold rolled copper gutters, single bead of slip joint construction allowing the back of gutter to run up under slate 4". The gutters will be provided with stiffeners at short intervals. Above gutters will rest on bed mould of cornice construction as clearly shown on drawings. This contractor to include neat miters at all angles, and conductor connections as required for rain conductors as hereinafter specified. This contractor will also include gutter end pieces where required by drawings.

CONDUCTORS, ORNAMENTAL CAPS, ETC.

All of the rain conductors required by drawings shall be 3 x 4" square with ornamental stock straps of approved pattern and ornamental stock caps of approved pattern. This contractor to include proper radius, elbows, easements, etc., as required by drawings. All rain conductors shall be of uniform lengths with soldered joints and shall stop 6" above finished grade as they will be cemented into cast iron drain pipes by plumbing contractor. All conductors to be in exact positions shown on drawings as no offsets will be allowed. Above conductors to be galvanized iron with flat seam on back.

SLATE ROOFS:

Entire roofs over house, roofs and sides of dormer windows, all as shown on drawings shall be covered with selected quality B— slate 10 x 16", laid $6\frac{1}{2}$ " to

the weather. Closed valleys to be used at all dormers and slate shall be doubled at all eaves. This contractor will count on putting B— or approved equal single ply roofing paper, 15-lbs. to the square, well overlapped at all joints, over all roofing surfaces before slate work is started. The paper to be well fastened to roof. The above slate to be well nailed counting on two nails to each slate. The nails to be galvanized iron nails. Slate to be carried out over all cappings, wood mouldings, etc. The slater will furnish and install flashings of N & G T—, S— or M— & E— "IX" redipped charcoal tin where required including at valleys, ridges, hips, etc. This contractor will use approved elastic roofers cement as required at hips, ridges, etc. The above roofs to be guaranteed for a period of one year in writing by this contractor and countersigned by the general contractor.

PLUMBING AND GAS FITTING:

Gas pipes to be put in house for both light and heat. All lines to be connected to one meter and only run to such light outlets as designated on drawings, as it is not the intention to carry gas to all light outlets. Where especially marked, piping shall be carried to side brackets. All brackets on first floor to be 6'-2" above finished floor. All brackets on second and third floors to be 5'-8" above finished floors. All risers to be $\frac{3}{4}$ " pipe and all branches for lights to be $\frac{3}{8}$ " pipe and branches for all fireplaces and stove outlets on first, second and attic floors to be $\frac{1}{2}$ " pipe.

Provide at the side of each fireplace on first and second floors a s— brass gas valve brass key and washer. Said valve to be approved by architect before installation. This contractor will run pipes to kitchen for range, to water heater in cellar to a point within 10'-0" of boiler location with shut-off provided on boiler line. He will also run line to laundry stove location and to such stove outlets as are noted on drawings. The plumber will figure on connecting instantaneous water heater, laundry stove and kitchen range. The laundry stove and kitchen range will be furnished at building by owner.

All pipes above cellar to be concealed and no joist notched any further than 5'-0" away from their bearings unless permission be given by the architect.

All pipes to be perfectly tight and to be left open for inspection, architect to be notified when this is to be done, so he can be present.

(To be Continued)

CRITICISM OF SPECIFICATIONS

IN response to the invitation to criticise the specifications of a brick and hollow tile house the first installment of which was published in the April issue we have received the following letter from one of our readers:

Your idea of presenting an anonymous specification with an invitation to criticise it, should serve to produce more practical specifications, a much needed improvement which will be appreciated by those for whom specifications are written. It would take much space to make clear the reasons that all changes needed should be made so that the architect could realize them.

Let us follow the operation of one or two clauses to illustrate.

The superintendent comes on the job with a force of men whose time goes on at say \$5 per hour. Materials are on the ground for a "shanty" and a workmen's toilet. The latter is the first thing to tackle. The superintendent examines the site plan and does not find a location indicated. He looks at the index. This not being in alphabetical order, and having several items bunched together, he has to read every word, but he finds nothing about the location. He glances over the items, reading parts of each, but finds nothing on the subject. He decides upon a location near the sewer and sets the men at work digging the trench, putting up the building, and making sewer and

PENCIL POINTS

water connections. After a week or two, the architect comes around and orders it removed. He points out that in an obscure place, under "PART 2", is the clause, "location to be given by the architect". Or, suppose the supt. found the clause and called up the architect to find where this important structure should be located, probably in a week or two the architect would come out and study the site over with great deliberation and finally stamp his heel in the ground and say "put it there". It would seem that the question was not so momentous that it could not have been determined and indicated on the site plan.

The writer recalls a similar incident in actual experience. A building was specified to be plastered "to the satisfaction of the architect". The plasterer thought he knew how to do a good job without bothering the architect and did a fine job of white coat work. Weeks later, after the trim was on, the architect saw it and demanded that it be taken off, giving instructions by phone as to "what he wanted." The plasterer did another good job omitting the white coat but troweled to a fine finish. After a week or two, the architect again demanded that it be removed and took the plasterer to another building and said "I want it like that". If he had specified "sand finish" or "float finish" it would have saved the architect much time and the owner and contractor a lawsuit. "The architect is responsible" but he does not foot the bills.

"PART 12" reads: "The architect has the right to discharge any workmen on the buildings without question." If the contractor has to figure on the consequences of this clause the owner will have to pay a goodly sum for something that will not show. The owner can depend upon it that he must pay for every unreasonable arbitrary demand found in the specifications.

An index made up as this is, not in alphabetical order and in bunches, such as "TIE RODS, ORNAMENTAL PLATES AND CLOTHES CHUTE", is of no practical use. It should have but one item in a line, be in alphabetical order, using the common general terms, and not in capital letters. Caps and lower case letters admit of catching every word at a glance, all caps do not. The first typewriters were quickly condemned for being all in caps.

Each item in the specification should begin with the subject in a cap and lower case letters about four letters in the left margin. One can run his eye rapidly down the margin and catch what he is looking for readily. "PART 1, PART 2", etc., serves no useful purpose. It is confusing to have a title in caps and begin the clause with the same word like "EXCAVATION: Excavation to be made" etc., and involves a waste of time for everybody from the writer to the reader.

Instead of "SPECIFICATIONS of Workmanship and materials to be used in the erection and completion of a brick residence and garage FOR.....ON.....CITY, etc.," we should prefer at the top, where it could readily be found in a bunch of specifications, a simple title identifying the job, like "Pershing Bldg.", "M. E. Church", "Jones House & Garage." with the location immediately under.

Generally speaking, important clauses are buried in a mass of useless stuff which is clearly set forth on the drawings, is embodied in the building laws or is in universal practice like: "every sixth course shall be a header course."

The popular word "workmanlike" has no definite meaning, except in a case where a fireplace was specified to be built in a "workmanlike manner". It certainly was "workmanlike", like the workman that built it, it smoked all the time.

A LETTER FROM WILLIAM T. SCHMITT

THE part of the specifications which you have printed in your April number I consider a ——— good specification. The fellow who edited it knows his "beans".

At the end of twenty-five mile stones, I have come to the conclusion that a specification must convey the idea that one knows whereof he speaks; that he is thoroughly acquainted with results that may be obtained, and that can be reasonably expected. A technical specification would

be Greek to a builder organized to build a house and a garage. I say, therefore, that the specification which you are holding up for a target, is written in terms that such a builder understands. Incidentally, I would say, that this said target is very nearly invulnerable, so to speak. No very sound criticism can be made of the part of the specification you have submitted.

THE TRAVELLING EXHIBITION OF SKETCHES

THE Travelling Exhibition of Sketches selected from among those entered in the Birch Burdette Long Competition for 1922 is now well on its way across the continent. It has been shown at the Massachusetts Institute of Technology, Boston; Pratt Institute; the T-Square Club, Rhode Island School of Design, and The Pennsylvania State College. It will be shown at Ohio State University from April 30th to May 3rd; University of Michigan, May 8th to 15th; Agricultural College of North Dakota, May 21st to 26th; Oklahoma Agricultural and Mechanical College, May 30th to June 3rd. Making a number of other stops on its way it will reach Los Angeles in September; on the return trip it will be exhibited at a number of clubs and educational institutions.

This exhibition includes the work of the prize winners, together with examples of the work of those who received honorable mention and in addition a number of the more meritorious works submitted. Sketches by the following are comprised in this exhibition: Robert M. Switzer, Denby T. Hird, G. G. Gilkison, Robert A. Lockwood, Ralph Fanning, John Wenrich, Arthur H. Gilkison, Earl Purdy, Armand D. Carroll, Joseph F. Kriner, F. Ray Leimkuehler, R. H. Douglas, H. Thearle, Charles M. Cowan, John Scott Lawson, Lester G. Chapin, Charles H. Marsh, J. T. Cronin, T. P. Yang, Frank Lee Bodine, Katherine Brady, J. E. Jackson, K. J. Baldwin, George Fred Keck, J. Louis Schillinger, Elmer A. Bennett, Meade A. Spencer, Edward H. Wigham, John Craig Janney, Louis C. Schlalos, Wilson R. Stewart, Robt. W. Snyder, E. Maxwell Fry, Edward J. Weber, George A. Gibbons, Lionel H. Pries, Hugh Perrin, Gerald K. Geerlings, Louis C. Rosenberg, Robert D. Murray, Ruth Seymour, Perry Coke Smith, Frank Martinelli, S. E. Mahon, H. A. Wieland.

BRASS MAIL BOXES

AN IMPORTANT new use for brass was marked at Atlantic City recently when the Post Office Department placed the first brass mail boxes ever used in this country at all mail collection points along the boardwalk. This step is the result of an inquiry instituted about a year ago by the Post Office Department at Washington with a view to reducing the heavy maintenance expense due to the rusting of the steel boxes, the average life of which is about three years. At the suggestion of the Copper and Brass Research Association, it was decided to try the brass boxes, and the Association furnished a specimen box, upon which pattern the Government manufactured the first lot of one thousand boxes at the Washington, D. C. Navy Yard.

Consideration has been given to the fact that long familiarity with the dark green paint used on the steel boxes might result in confusion on the part of the public if the brass is left unpainted, but inasmuch as the painting of the steel boxes is in itself a costly item which will be obviated with the brass boxes, it is possible that the Post Office authorities will eliminate painting.

Atlantic City was selected for the first use of the brass boxes because the sea air is particularly severe on the steel, it being necessary in some cases to replace boxes along the boardwalk in as short a time as three months. Brass boxes will shortly be placed in use in New York and other cities where conditions are favorable for speedy determination of the theory that the brass box will, by outlasting several of the steel boxes, and requiring no paint or other protection, result in marked economy for the department.

PENCIL POINTS

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

The Screening of Your Home.—Attractive booklet in colors covering porch screening and a full line of modern screening devices for all uses. 16 pp. 8½ x 11. Higgin Mfg. Co., Newport, Ky.

Catalog and Test Samples for the Drafting Room.—A book of 178 pages showing complete line of drafting room requisites with large samples of blue print papers, tracing cloths, detail papers, bristol board, drawing papers, water color papers, etc. Thumb indexed, 8½ x 11. Charles H. Robbins, Philadelphia, Pa.

Modern Wood Finishing.—Handsome brochure illustrated in color, covering completely subject indicated by title. 68 pp. 8½ x 11. E. I. DuPont de Nemours & Co., Inc., Paint and Varnish Division, Wilmington, Dela.

The Fire on the Hearth.—Attractive booklet on the subject of fireplaces and fireplace construction. Diagrams and working drawings. 5½ x 8½. 16 pp. H. W. Covert Co., 137 East 46th St., New York City.

Lally Columns.—Illustrated booklet showing construction of Lally Columns, tables of sizes, drawings, etc. 50 pp. 8 x 11. Lally Column Co., Calver St., Brooklyn, N. Y.

Bommer Spring Hinges.—Catalog No. 47, showing complete line of spring hinges, detail drawings, tables and data regarding a large line of hardware specialties. 40 pp. 7 x 10. Bommer Spring Hinge Co., 251 Classon Ave., Brooklyn, N. Y.

California Redwood.—Four booklets on the subject of California Redwood and its uses are published by the Pacific Lumber Co. of Illinois, 332 South Michigan Ave., Chicago, Ill. Write for portfolio of printed matter for architects.

Tudor Stone Roofs.—Attractive booklet on the subject of artistic slate roofing. Many attractive illustrations. 24 pp. 6 x 9. Rising & Nelson Slate Co., 101 Park Ave., New York City.

Linoleum Specification Data.—Portfolio A. I. A. classification 2811. Contains complete data regarding linoleum. Color samples, outline of uses, specifications, etc. Armstrong Cork Co., Linoleum Division, Lancaster, Pa.

Super-Smokeless Boilers.—Attractive 16 page bulletin illustrated with sections and diagrams, blue prints and tables. Discusses heating equipment suitable for schools, churches, public buildings, theatres, hotels, apartments and residences. Utica Heater Co., Utica, N. Y.

The Book of Masterbuilt Floors.—Attractive 12 page booklet done in color covering descriptions and uses of Colormix concrete floor hardener, waterproofer and dust-proofer. The Master Builders Co., Cleveland, Ohio.

Heating the Manufacturing Plant.—70 page booklet covering the subject indicated. 6 x 9. Warren Webster & Co., Camden, N. J.

Adseo Heating.—Attractive booklet, 16 pages covering subject of low pressure steam heating systems. American District Steam Co., North Tonawanda, N. Y.

Concrete for Town and Country.—Handsome illustrated book containing many diagrams and much useful information on the subject of concrete for a wide field of uses. 190 pp. 8 x 11. Lehigh Portland Cement Co., Young Building, Allentown, Pa.

Seven Centuries of Brass Making.—Handsomely illustrated brochure covering in the most interesting way the history of brass manufacture. Contains much useful information on properties and uses of brass. 80 pp. 8 x 11. Bridgeport Brass Co., Bridgeport, Conn.

Brass Pipe and Piping published by the same firms, a handsome booklet of 50 pages covers very completely the subject indicated.

Specifications for Insulated Wire and Cables.—Three specifications covering three grades of insulation most commonly used. 8½ x 11. Atlantic Insulated Wire and Cable Co., Stamford, Conn.

Humphrey Service Manual.—Attractive booklet telling all about the subject of gas water heaters. Illustrated in colors. Cross sections, tables, diagrams and complete specification data. 32 pp. 8 x 11. Humphrey Co., Kalamazoo, Mich.

Glass Lined Laundry Chutes.—Instructive little booklet on an interesting specialty. Indispensable in hospitals and other institutions and extremely useful in modern residences. 5 x 7. 16 pp. The Pfaudler Co., Rochester, N. Y.

The Lure of the Fireplace.—Attractive little brochure illustrated with engravings and diagrams showing fireplace designs, approved methods of construction, etc., 24 pp. 5 x 7. Peerless Mfg. Co., Louisville, Ky.

Fremont Reversible Window Devices.—Illustrated booklet in sepia showing line of reversible windows, hardware specialties, etc., 20 pp. 6 x 9. Twin-Plex Reversible Window Co., 303 Grote St., Buffalo, N. Y.

Asbestone Flooring.—Booklet illustrated in color giving complete information on the product indicated. Instructions, specifications, suggestions for uses, etc. 8½ x 11. 32 pp. Franklyn R. Mueller & Co., Waukegan, Ill.

Beautiful Homes.—Folder in colors showing color schemes for hall, living room, dining room, bed room and pantry in attractive residence. Berry Brothers, Detroit, Mich.

Also ask for Luxeberry Wall Finish, a small portfolio containing valuable notes on decorating.

Handbook of Milford Columns.—Complete description of Milford steel and concrete columns, diagrams, tables and complete engineering data. 62 pp. 6 x 9. Milford Iron Foundry, Column Dept., Milford, Mass.

Page Boilers.—Condensed handbook containing much valuable information on the general subject of heating, piping, water supply, etc. Pocket size. 118 pp. 4½ x 7½. William H. Page Boiler Co., 141 West 36th St., New York.

Bulletins.—A series of six loose-leaf bulletins has been prepared on the subject of waterproofing, protective coatings, etc. Minwax Co., 18 East 41st St., New York. Just ask for complete set of bulletins.

Pure Water for Swimming Pools.—Illustrated booklet covering subject of water purification, swimming pool design and equipment. 32 pp. 7 x 10½. Wallace & Tierman Co., Inc., Newark, N. J.

The Washfountain.—Illustrated booklet fully describing modern type of equipment for industrial plants, schools, institutions, etc., where large numbers of people wish to wash at the same time. Diagrams, cross sections and complete information. Bradley Washfountain Co., 15 E. Van Buren St., Chicago, Ill.

"Duro" Pumps and Water Systems.—Manual of 40 pp. covering in diagram and text complete subject of modern water supply systems. Duro Pump & Compressor Co., Dayton, Ohio.

Blabon Art Linoleums.—Styles for 1923. Complete booklet in color showing over 100 designs. 120 pp. Also sample portfolio showing different grades and weights. George W. Blabon Co., Philadelphia, Pa.

Lupton Steel Windows.—Bulletin with price list covering the subject of steel windows for apartments, residences, basements, schools, hospitals, etc., 16 pp. 8½ x 11. David Lupton's Sons Co., Allegheny Ave. and Tulip St., Philadelphia, Pa.

Multiblade Fans.—Complete catalog covering equipment for heating, ventilating and humidifying systems. Complete engineering data, diagrams, specification material, etc., 86 pp. 8½ x 11. Clarage Fan Co., Kalamazoo, Mich.

Data Portfolio on Asbestos Lumber, Roofing, Shingles, etc.—Complete material for specification writers. Ask for architects' portfolio. Asbestos Shingle, Slate & Sheathing Co., Ambler, Pa.

Cooling, Ventilating and Heating the Theatre.—A very useful booklet just off the press, fully illustrated with diagrams and complete data. Every designer of an auditorium should have a copy of this book in his portfolio. 32 pp. 6 x 9. Typhoon Fan Co., 345 West 39th Street, New York.

Fireproof Veneered Doors and Trim.—A 16-page book. Size 8½ x 11 inches. Containing full information and complete details and specifications relative to Pyrono Fireproof Veneered Doors and Trim. Also Pyrono details in sheet form for tracing, are now ready for distribution by The Compound & Pyrono Door Co., St. Joseph, Michigan.

(In our March issue the address of the above company was incorrectly given as St. Joseph, Mo.)

Waterproofing Portfolio.—Portfolio standard filing size containing complete information and specification data covering subject of waterproofing all kinds of building materials. A. C. Horn Co., Long Island City, N. Y.

Architectural Metal Work.—Handsome brochure in sepia illustrating numerous examples of bronze and wrought iron work as installed in recent buildings. 10½ x 14 in. 32 pp. The Flour City Ornamental Iron Co., Minneapolis, Minn.

Color in Architecture.—Brochure illustrated in color plates and numerous engravings in sepia, on the basic principles of the application of color in available mediums. 8½ x 11 in. 38 pp. The National Terra Cotta Society, 19 West 44th St., New York.

Lighting Service for Banks and Insurance Companies.—Brochure illustrated by engravings and diagrams showing both direct and indirect lighting equipment suitable for use in banking and similar buildings. Contains much practical data. 8 x 11 in. 32 pp. I. P. Frink, Inc., 24th St. and 10th Ave., New York.

(Also "Lighting Service for Hospitals," "Picture Lighting" and "Lighting for Stores.")

Water Mixing Valves.—Illustrated hand book showing thermostatic water mixing valves for showers and a variety of other uses. Diagrams and complete specification data. 32 pp. 7½ x 10½ in. Leonard-Rooke Co., Providence, R. I.

Carrier Quadrant Adjuster.—Service bulletin on subject of casement window hardware. Drawings, etc. Carrier Adjuster Co., Asheville, N. C.

PENCIL POINTS

A Series of Bulletins have been compiled by the Edison Lamp Works of the General Electric Company, giving complete Lighting Data relative to several types of Industrial Buildings, Automobile Garages, and Display Room Lighting, and Street Lighting. Size 6 x 9 in., and contains 32 pages each. May be obtained by addressing Edison Lamp Works, of General Electric Company, Harrison, N. Y.

Pumping Bulletin.—Loose-leaf bulletin No. 45 containing specifications, drawings, tables of sizes and capacities of various types of centrifugal pumps for use in buildings. A valuable handbook on the subject. 8½ x 11 in. 60 pp. Chicago Pump Co., 2300 Wolfram St., Chicago, Ill.

Handy Book on Painting.—A valuable compilation of painting data, covering formulas and methods of application for all classes of work. Vest pocket size. 3½ x 5½ in. 100 pp. National Lead Co., 111 Broadway, New York.

Specification Data Sheet.—Contains information regarding Ventilouvre, a specially designed ventilator for use in doors and transom space. Full page drawing showing details. 8½ x 11 in. Ventilouvre Co., 103 Park Ave., New York.

Zinc Spouting.—Four booklets dealing completely with this subject. Detail drawings and other useful data. Illustrations of finished work. Tables of costs, charts, etc. Published by New Jersey Zinc Co., 160 Front St., New York.

Painting Specifications.—Specifications covering new and old work, plaster, cement and concrete; iron and steel; repainting iron and steel; galvanized iron and steel; galvanized or zinc coated iron; copper and zinc flashings; tin roofs etc.; interior—complete specifications for all kinds of interior work. 14 pp. fully indexed. 8½ x 11 in., published by New Jersey Zinc Co., 160 Front St., New York.

Audible Calling Systems.—Bulletin covering this type of equipment for many different uses and under varying conditions. 8½ x 11 in. 16 pp. Holtzer-Cabot Electric Co., 125 Amory St., Boston, Mass.

(The following bulletins are also available on application. "Fire alarm Apparatus," "Inter-communicating Telephone Systems," "Annunciators and Signaling Apparatus," "Bells, Buzzers, Horns, Push Buttons and Relays" and "Magnetic Clock")

Electric Time Systems.—Loose-leaf portfolio containing information on this subject as applied to schools, banks, hospitals, libraries, hotels, public buildings, railway terminals and manufacturing plants. 8½ x 11 in. 60 pp. International Time Recording Co., 50 Broad St., New York.

Anchor Post.—A monthly illustrated magazine covering subject of fencing for all conditions. Contains much material of interest to architects. 8 x 11 in. Anchor Post Iron Works 54 Church St., New York.

Seamless Brass Pipe.—Bulletin No. 1, A. I. A., classification 29 B4. Illustrated bulletin with tables, price lists, weights, etc. Typical layouts of hot water systems of various kinds. 7½ x 10½ in. 24 pp. Rome Brass & Copper Co., 105 Dominick St., Rome, N. Y.

Plumbing Fixtures.—The complete line of Kohler trade-marked plumbing ware is described in their 216-page catalog, 7½ x 10½ inches. They also furnish a Roughing-in Measurement Binder, size 5 x 8 inches containing looseleaf sheets on all staple fixtures. For either or both of these address Kohler Company, Kohler, Wisconsin.

Glass Lined Steel Laundry Chute.—A sanitary laundry chute which may be thoroughly sterilized is described in a booklet just issued by the Pfaudler Co. This booklet is indexed and contains complete specifications as well as detail diagrams showing typical installations. Size 5 x 7¾ inches. 16 pps. A copy will be sent to anyone addressing The Pfaudler Co., Rochester, N. Y.

Improved Mechanisms in Builders' Hardware.—A very complete catalogue has been issued by The Oscar C. Rixson Co., 1210 Architects Bldg., New York City, showing detail drawings, and instructions for installing mechanical builders' hardware such as casement hinges, casement operators, hinges and pivots, and overhead door checks. It also contains other information of interest. The catalogue in 6 x 9 in. and contains 58 pages.

Hoffman Casements.—Portfolio of detail drawings and specification data dealing with casement windows, screens, shutters, curtains, weatherstrips, etc., 34 pp. 8½ x 11 in. Including one large drawing 23 x 32 in., showing full-size details of millwork for casements. Andrew Hoffman Mfg. Co., 902 Steger Bldg., Chicago, Ill.

Burnt Clay Products.—Handsomely illustrated portfolio with color plates, showing elevations and details of residences with especial reference to the application of burnt clay products. Should be in every reference library. 50 plates. 10 x 12. B. Mifflin Hood Brick Co., Atlanta, Ga.

The Right Angle.—Waterproofing issue. Covers subject of waterproofing concrete. 8½ x 11 in. 16 pp. General Fireproofing Co., Youngstown, Ohio.

Wilson Rolling Steel Doors.—A pamphlet showing both hand and motor type of operation for rolling doors and containing specifications for same. Send to J. G. Wilson Corporation, 4 East 36th Street, New York City.

The Control of Lighting in Theater.—Bulletin No. 28 of the Frank Adam Electric Co., contains valuable data on the subject of theater lighting, including standard layout and table showing accurate assembly of dimensions, based on proscenium opening, together with complete specifications for installing the Major System. 36 pp. Size 8½ x 11½" profusely illustrated. Frank Adam Electric Company, St. Louis, Mo.

Von Duprin Self Releasing Fire Exit Latches.—A book of 50 pages showing a complete line of these latches, specifications and much valuable information for architects and draftsmen relative to installation. Also automatic locking devices for casement windows and automatic door holders. Size 8" x 11". Vonnegut Hardware Company, Indianapolis, Ind.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of PENCIL POINTS, published monthly at Stamford, Conn., for April 1st, 1923.

State of New York, }
County of New York, } ss.,

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared W. V. Montgomery, who having been duly sworn according to law, deposes and says that he is the Business Manager of the corporation publishing Pencil Points, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of	Post office address
Publisher, The Pencil Points Press, Inc.,	19 East 24th St., N. Y. City.
Editor, Eugene Clute,	19 East 24th St., N. Y. City.
Managing Editor, None.	
Business Manager, W. V. Montgomery,	19 East 24th St., N. Y. City.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

The Pencil Points Press, Inc., 19 East 24th St., N. Y. City.
Ralph Reinhold, 19 East 24th St., N. Y. City.
F. W. Robinson, 19 East 24th St., N. Y. City.
E. G. Nellis, 19 East 24th St., N. Y. City.
Marion S. Carpenter, 920 Fifth Avenue, N. Y. City.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is..... (This information is required from daily publications only.)

W. V. MONTGOMERY,
Business Manager.

Sworn to and subscribed before me this ninth day of March, 1923.

[SEAL.]

G. H. SYKES,
Notary Public.

My commission expires March 30, 1924



WANTED

A LETTER we have received from one of the foremost architects in this country is printed below because it not only describes a type of man that is wanted in his office and in other offices but lays stress on certain qualifications that are of the greatest importance in men wanted to fill other places as well. Here is the letter:

"Your letter of April 11, asking me to dictate an informal letter giving suggestions for the improvement of drafting-room practice has remained unanswered until today it has again come to my attention. I shall not attempt to answer it, but take the occasion to ask you a question.

"Do you know a competent, practical architectural draftsman whom I can get to come into my drafting room and act as a sort of general censor of practical working details, a man whose mental attitude is such that he can keep good feeling among the draftsmen he comes in contact with and at the same time check over their work and aid in systematizing it, prevent errors of a practical kind and instruct them, where necessary, in standard, economical, and practical ways of doing the job? He does not have to be an engineer or an artist. He simply has to be a common-sense, level-headed, experienced, practical draftsman who has a thorough-going knowledge of good building practice. If you can tell me of such a man, I shall be glad to take him on, for he would be a God-send to this office."

Rather a large order for us, for men of that calibre are not looking for jobs—they are usually well established in some architect's office and have no reason to make a change. As a matter of fact, there are very few men who answer this description. This should not be so. The requirements are perfectly reasonable.

The demand for a man whose mental attitude is such that he can criticise and check over the work of his associates and instruct them in practical methods while keeping good feeling among them is probably one of the most difficult to meet. Along the same line is the demand that he have common-sense and that he be level headed. With characteristic clearness of vision this architect has seen the element of personality in its true proportions—and it looms up very large indeed in almost every position. Too little recognition has been given to this side. Knowledge, industry, accuracy and certain other qualifications are generally recognized as important—and personality is overlooked or given slight value. The lack of the right mental attitude towards the world, his work, and his associates blocks the way to advancement and success for many

a man who never dreams of the cause of his failure to get on.

Note, please, the requirement that this man shall be an experienced, practical draftsman and let us remember that years spent in any line of work bring experience only to the man who thinks and learns as he works.

The demand in this letter for a draftsman who, in addition to the other qualifications, has a "thorough-going knowledge of good building practice," draws attention to another weak spot. How many men are there who could qualify on this point? Still, architecture comprehends the practice of building and such knowledge might well be supposed to be among the fundamentals.

There is much in this letter to stimulate thought, we have barely touched on it here. We hope that you will let us know what you think about it. Write to us and if we believe that your letter contains something helpful to our other readers, we will print it. Let us hear from you, please.

ARCHITECTURAL DOCUMENTS.

WE NOW have in preparation a reprint of "Architecture Toscane," first printed in 1815. This reprint, which will be ready some time this month, will make available a collection of drawings of the greatest practical value as a source of design inspiration in the architectural drafting room. Copies of the old French editions are practically unobtainable and prohibitive in price. This reprint will be within the means of all to purchase.

In "Architecture Toscane," A. Grandjean de Montigny and A. Famin, Architects, and Fellows of the French Academy in Rome, presented a very beautiful and useful record of many of the finest old works of architecture, in a collection of one hundred ten plates.

This reprint of "Architecture Toscane" is the first of a series of books which will be published under the general title "The Library of Architectural Documents." Other titles will be announced shortly.

This new series of books will round out the plan of service which the publishers of PENCIL POINTS are carrying forward. First the magazine, with articles and pictures and news; second, "The Pencil Points Library," with its books on various interests that center in the drafting room; and third, the "Library of Architectural Documents," supplying the historic background.



Figure 1. Detail of The Imperial Hotel, Tokyo, Japan. Frank Lloyd Wright, Architect. The Architectural Character of this Hotel is One of its Greatest Assets as a Tourist Hotel, in its Particular Location.

HOTEL ARCHITECTURE FROM A HOTEL MAN'S VIEWPOINT

BY ROY CARRUTHERS

This is the first installment of a serial article in which Mr. Carruthers, who is Managing Director of the Walford-Astoria Hotel, will tell what are the practical requirements in hotel design from the hotel man's standpoint. Mr. Carruthers will discuss design character, planning and equipment.—ED.

THE first step in the planning of a new hotel should consist in getting a clear idea of the type of hotel it is to be. This will be determined by the character of the place in which it is to be built and the kind of patrons it is to serve. A commercial hotel is a very different problem from a residential hotel, and a tourist hotel is still different in its requirements.

The commercial hotel has become standardized, the type is well known and its design character has been established, it is a simple, dignified, light and airy building, arranged for the convenience and comfort of its guests, but usually with little individuality of character.

The residential hotel may well have an atmosphere of its own to a greater degree than the commercial hotel. It is, however, the tourist hotel that requires the most pronounced individuality.

The tourist hotel that is sufficiently different and interesting to become talked about, advertises itself, it attracts tourists. Other things being equal, it has a much greater chance of success than the hotel that is commonplace. Striking and appropriate design character is a very valuable asset to a tourist hotel. Tourists travel for the sake of change of scene and to enjoy the atmosphere of unfamiliar places, they do not want to see a hotel in Florida or California or Arizona that looks like the hotels they are familiar with in New York.

One of the most talked of hotels is The Mission Inn at Riverside, California. Its architecture was inspired by the old California missions and is interesting and appropriate. It has the right atmosphere. It fits in with the tourist's attitude of mind and increases his enjoyment of the trip. People who find the atmosphere of a hotel to their liking not only advertise the hotel but they are much more contented and easier to please.

A striking example of suitability and interesting character in tourist hotel design is the Imperial

Hotel, opened a few months ago in Tokyo, Japan. I spent some time there recently and was impressed with the wisdom of the president of the operating company, Honorable K. Okura, and of the managing director, Mr. Yamaguchi, in appreciating the

value of the unusual architectural design made and carried out so successfully by Mr. Frank Lloyd Wright. Speaking now only of the design character and deferring the discussion of the very interesting plan of this hotel, I may say that it is a work of genius. It provides the atmosphere required. It neither reminds the tourist of the hotels with which he is familiar at home nor competes

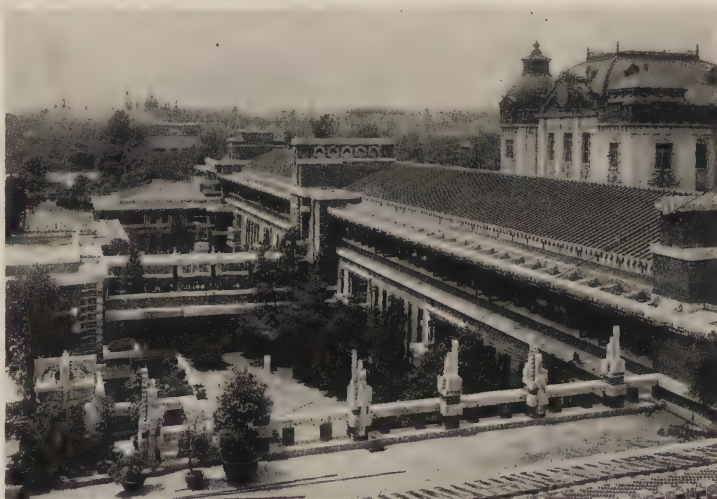


Figure 2. View of The Imperial Hotel, Tokyo, Japan.
Frank Lloyd Wright, Architect.

with the native Japanese architecture. Though there is no detail that is Japanese, this building does express very definitely and effectively the spirit of Japan, for in some mysterious way the architect has wrought into this structure an epitome of the traditions and the progressiveness of the country. Figure No. 1 is a photographic view showing characteristic detail of this building. The exterior of the Imperial Hotel is of buff bricks and the stone work is of a greenish yellow lava marked with brown spots. The copper roofs are turquoise color. Plants and flowering shrubs, carefully tended, add their notes of color to the scheme. The interior is equally out-of-the-ordinary and attractive. The brick and lava showing in the interior establish unity with the outside. Where the walls are plastered they have a coating upon which ground pearl shell has been dashed. The wood throughout is Hokkaido Oak, waxed.

This hotel occupies an area three hundred by five hundred feet, and is three stories in height for the most part, with portions rising more than twice this height. This hotel is designed not only to accommodate tourist travel but to provide a centre of social life for residents of Tokyo. It has a cabaret, a theatre seating one thousand, a banquet hall and



Figure 3. Hotel Ponce De Leon, St. Augustine, Florida. Carrère & Hastings, Architects.
From a Rendering in Pen-and-Ink by Otto H. Bacher.

PENCIL POINTS

restaurants to accommodate this feature of its service.

Probably the first great resort hotel in America to be designed in the spirit of the architectural traditions of the locality in which it was built is the Ponce de Leon, at St. Augustine, Florida, of which Carrère & Hastings were the architects. See Figure No. 2, an excellent pen-and-ink drawing of this hotel. It is interesting to bring together in these pages this pioneer among great resort hotels and the newest of these hotels in far away Japan. That the architects of the Ponce de Leon perceived the importance of creating a hotel in keeping with the atmosphere of its location nearly forty years ago is an evidence of remarkable clearness of vision.

The hotel that serves as a centre for social life in addition to its other functions requires most thoughtful planning and painstaking direction. Two of the hotels the writer has operated may be regarded as examples of this type, namely, the Palace Hotel in San Francisco, and the Waldorf-Astoria, New York. The Palace Hotel was an institution rather than a private enterprise, so far as the attitude of the public went, and the same may be said of the Waldorf-Astoria. The Waldorf-Astoria has been a great leader among hotels. It was the first hotel to which great social events of the city were taken

instead of being held in the homes of those giving them. It was there the first large social event of the kind, the Bradley-Martin Ball, was held. Its plan and policy are the results of the far-sighted genius of George C. Boldt. The Waldorf-Astoria was the largest in its day and, at the present time, I feel safe in saying that no hotel in the world has the facilities for handling the public that the Waldorf-Astoria has.

A third hotel with the operation of which the writer has been identified, the Hotel Pennsylvania, stands out as the greatest commercial hotel in the world. It has an average daily arrival and departure larger than the individual capacity of 99 per cent. of the hotels throughout the world. Features of the plan and equipment of commercial hotels will be discussed in a later issue.

The plans of the Olympic Hotel, Seattle, Washington, the design for which has been drawn by George B. Post & Sons, will be shown and discussed. The Olympic is a hotel of the standardized type, into which have been introduced the latest ideas. It is a hotel of moderate size in a city that may be regarded as typical of American cities. It has been chosen as representing a widely interesting type of hotel—the kind of hotel the architect is

(Continued on page 55)



Figure 4. *The Olympic, to Be Built at Seattle, Washington. George B. Post & Sons, Architects.*

FLASHING

CEDAR SHINGLE ROOF

ELEVATION

SECTION

MAIN ENTRANCE DOOR & PORCH

ALTERATIONS TO HOUSE BY
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26;

THE MAKING OF WORKING DRAWINGS

PART II, SCALE DETAILS

BY JOHN C. BREIBY

This is the second of a series of articles in which Mr. Breiby, of the staff of Carrere & Hastings, is giving much practical information on drafting room work. This first article covered the preparation of general drawings, the one-quarter or one-eighth inch scale drawings. This article covers the making of three-quarter and other scale details. Architectural models, shop drawings, etc., will be treated and at the conclusion Mr. Breiby will take up the preparation of sketches, etc., particularly sketches of interest to the drafting room.—Ed.

IN THE last article on the making of working drawings, the general $\frac{1}{4}$ -in. and $\frac{1}{8}$ -in. architectural drawings were considered in a small measure. The general drawings, framing and mechanical drawings, larger scale drawings, full-size details, models, shop drawings, specifications and superintendence are all so intimately related and have such important parts in the ultimate result desired, a complete building, that it is impossible to consider any part of working drawings, without giving thought to all.

The composer of a symphony carefully works out each melody theme and motif, its development and orchestration, and takes pride in each part, but it is not until the entire work is finished that full satisfaction is realized. The composer will always consider that no matter how beautiful any detailed part may be, it must be subordinate to the effect of the whole.

So it is with the making of drawings. Pride should be taken in each drawing as it has its particular purpose to serve in the completed composition. Always visualize the completed work, not on paper, but as actually erected in materials which nature has provided, moulded into shape by man. However small a part is played by the individual draftsman, his work will stand as a testimony to skill or lack of it.

In the editorial on "Draftsmanship," which was published in the April number of PENCIL POINTS, parts are well worth committing to memory. Try to feel the work and do it for the sake of a good result, not merely because it was so ordered.

Scale detail drawings are developments in part or in whole from the general architectural $\frac{1}{8}$ -in. or $\frac{1}{4}$ -in. scale drawings, or they may be prepared to show some detailed information which would be impossible to work out in small scale.

Scale drawing is perhaps the most interesting work the draftsman is called upon to perform in the routine of his work, bringing out the very best in the skill of drafting, knowledge of materials, the use thereof, and of construction.

These drawings are generally prepared at a scale of from $\frac{1}{2}$ -in. to 3-in. to the foot, in fact, any convenient scale may be selected, providing all necessary information for which the drawing is made can be shown. Most offices use some particular scale as being standard. Perhaps the best scale to use is that of $\frac{3}{4}$ -in. to the foot, as it enables the contractors in the execution of the building to use the ordinary rule, for 2-in. indicated on

the scale detail would equal exactly $\frac{1}{8}$ -in. on the builder's rule.

In the general estimating sets of working drawings some scale details are very necessary as such drawings enable the contractor to establish prices more closely on ornamental work such as carving of the stone, ornamental iron work, and other special features. Such drawings then become a part of the contract set of general drawings.

For the purpose of this article it may be well to classify scale detail drawings into two parts. First those relating to architectural design and ornamentation, and secondly drawings which cover purely practical points.

Design detail drawings are not intended to more fully work out the design of a building, for if all mouldings, ornament, values of materials and color values could be possibly drawn small enough on the $\frac{1}{4}$ -in. or $\frac{1}{8}$ -in. drawings, perhaps better proportions could be maintained for the completed work. As this is not possible, the design scale drawings will serve to a great extent as the magnifying glass and therefore must retain all of the character of the design, values of mouldings, proportions, etc. By this it must not be taken that no thought to design is necessary or that it is merely a copy at a larger scale, for as the magnifying glass will show up flaws, so will the working up of larger details bring out conditions necessary for re-study and the particular detail may be simplified or elaborated or even proportions changed in order to bring its proper relation to the complete design. If a complete change of design is desired it is best to step back and re-study at a smaller scale and incorporate such desired change with the ensemble, where it can best be judged as a part of the complete design. Such work really is a part of designing and these suggestions may be over-stepping the bounds of how to prepare working drawings, but as the first step in design given to the younger draftsman in an office is often to study and prepare some detail drawing, the suggestions may not be amiss.

Practical conditions, and how to show them clearly, always become a part of preparing of design details. Figures Nos. 1, 2, 3, 5 and 6 clearly indicate this and the drawings are all details of design. From these drawings the contractor can accurately measure and will know almost within an inch how much material has to be gotten out, to perform the work as called for. The mill man, the modeler, and stone carver, in short all artisans and material men, will know exactly what is wanted. The above

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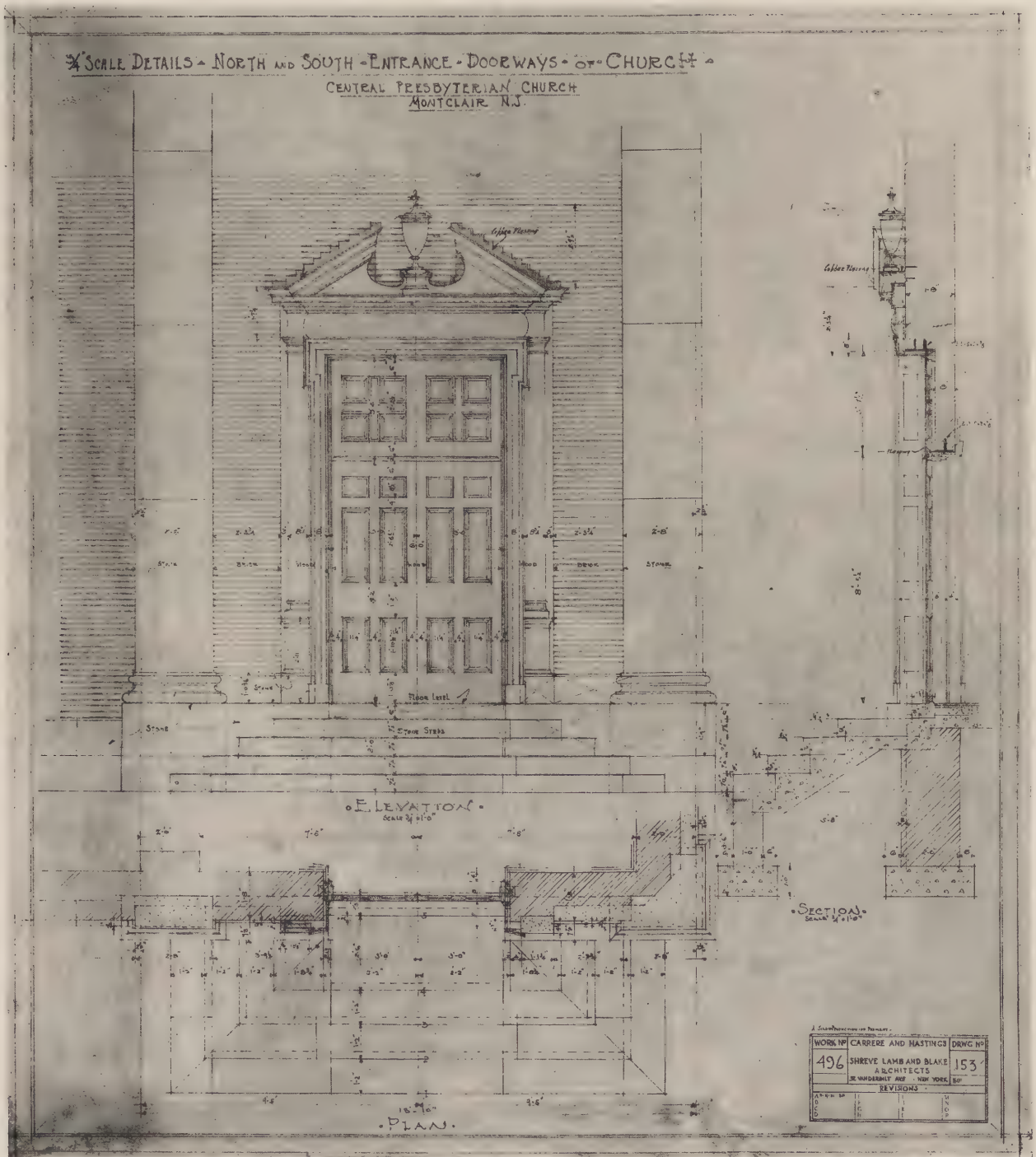


Figure 2. North and South Entrance Doorways of Central Presbyterian Church, Montclair, N. J.
Carrère & Hastings and Shreve, Lamb & Blake, Architects.

PENCIL POINTS

mentioned drawings were all necessary with the estimating set and contracts based thereon.

To prepare accurate detail drawings—simplifies the making of full-size details which are to follow and also guides the checking of shop drawings. At times shop drawings can be almost completely prepared from scale details and the checking thereof may only mean the correction of profiles, etc. This subject will be taken up in another article.

The foregoing chapters have mainly explained scale details and their relation to design.

The drawing indicated by Figure No. 4 is a $\frac{3}{4}$ -in. scale detail of an absolutely practical nature. Such details are very necessary where particular parts of the building require special attention and where it would be impossible to indicate detail completely enough on small scale drawings, and are very often prepared to interpret the meaning and functions of materials as called for in the specifications, for the execution of the work. To mention all particular parts of the work which would require explanatory scale details is too great a subject to mention under the scope of this article.

Remember that all large scale details must show practical work in connection therewith, and do not allow the effort to make a pretty drawing, showing ornament, etc., cause neglect of the necessary information.

Consider the general working drawings well, study carefully what portions are necessary to detail, especially to form part of the estimating set. It is assumed that all practical and required conditions have been checked from the general working drawings, framing and mechanical drawings, specifications, etc. Check again practical points which may affect the particular detail to be made. Do not take it for granted that no mistake has been made.

It is of utmost importance that the designer be consulted and his criticisms and suggestions carefully followed.

Read the specifications thoroughly, more especially regarding materials and methods of construction as called for therein, concerning the particular drawing which is to be made.

Think carefully what portions are necessary to be detailed—avoid any repetition—for instance if window or door details are to be prepared and many are of the same design, draw one door of a particular type and state by a note on the drawing the number required or give the serial numbers, if door and window openings are numbered on the general set of working drawings. Many offices follow the practice of numbering the door and window openings on the small scale general drawings.

Detail drawings should be made more or less in sequence as required by the construction of the building, for instance, first the details required for cellar or basement work, then the exterior windows or doors, as the door and window frames are usually set when the walls are built; then details of chimneys and rough fireplace openings, practical parts of stair construction and of many other practical points.

Ornamental or practical details required for the exterior details must be started as soon as the work

is under contract. The scale drawings which are required for estimating and contract drawings must of course be worked up with the general $\frac{1}{8}$ -in. or $\frac{1}{4}$ -in. scale general drawings. See that all detail drawings are made and prints issued to the contractors before it becomes necessary for them to request them.

Follow up with scale interior drawings as rapidly as possible. For especially designed interior finish drawings it is very necessary at times to take actual measurements of the executed work and this will also oftentimes be necessary for practical drawings. As an example, if a skylight is to be detailed, the actual opening provided therefor at the building must be measured, and so on for other details necessary to be provided after the work governing same has been erected.

For most scale drawings, full-size details must follow as rapidly as possible, the making of which will be considered as another subject.

Keep well ahead of the actual construction with necessary drawings.

Follow the same general principles as suggested in the article on general drawings previously issued, in the laying out of scale detail drawings whether they are made for design or practical purposes, establish main axis line, height lines, etc.

It may be well to state that all of the drawings illustrated with this article are drawn to a scale of $\frac{3}{4}$ -in. to the foot with the exception of drawing shown by Figure No. 3, which was prepared according to the metric system.

Figure No. 1 shows the detail of a small entrance doorway. Notice that the building up of the door itself is shown, transom over door indicated, height of columns figured, etc. The actual construction of the pediment is not shown. It is better in some cases to allow the contractor to execute the actual practical construction according to his builders' knowledge.

Specially studied detail of parts of small buildings such as indicated on this drawing, always makes for the best results and gives some character to the building. The main cornice, window heads, lattice work, window frames, wooden shutters, etc., can all be detailed likewise in a simple way, at a small cost and this is well worth the labor spent therefor. The result will be a "home" and not merely a place to live in.

Figure No. 2 shows the detail of an entrance door to a church. Carefully study how the practical points are considered on the plan and sections: lintel angles supporting brick work indicated; detail of steps and foundations are shown; backing of stone work; the door itself is completely figured tying it up in relation to stone pilasters. It is quite safe to say that all information necessary for the making of later full-size details and execution of the work is simplified by a drawing of this character.

Figure No. 3, shows a detail of a part of the main elevation of a large residence erected in Havana. This drawing was drawn to the metric scale of five centimeters equals one meter. This is a very interesting drawing for practical use as well as for design: character of iron work is shown; types of

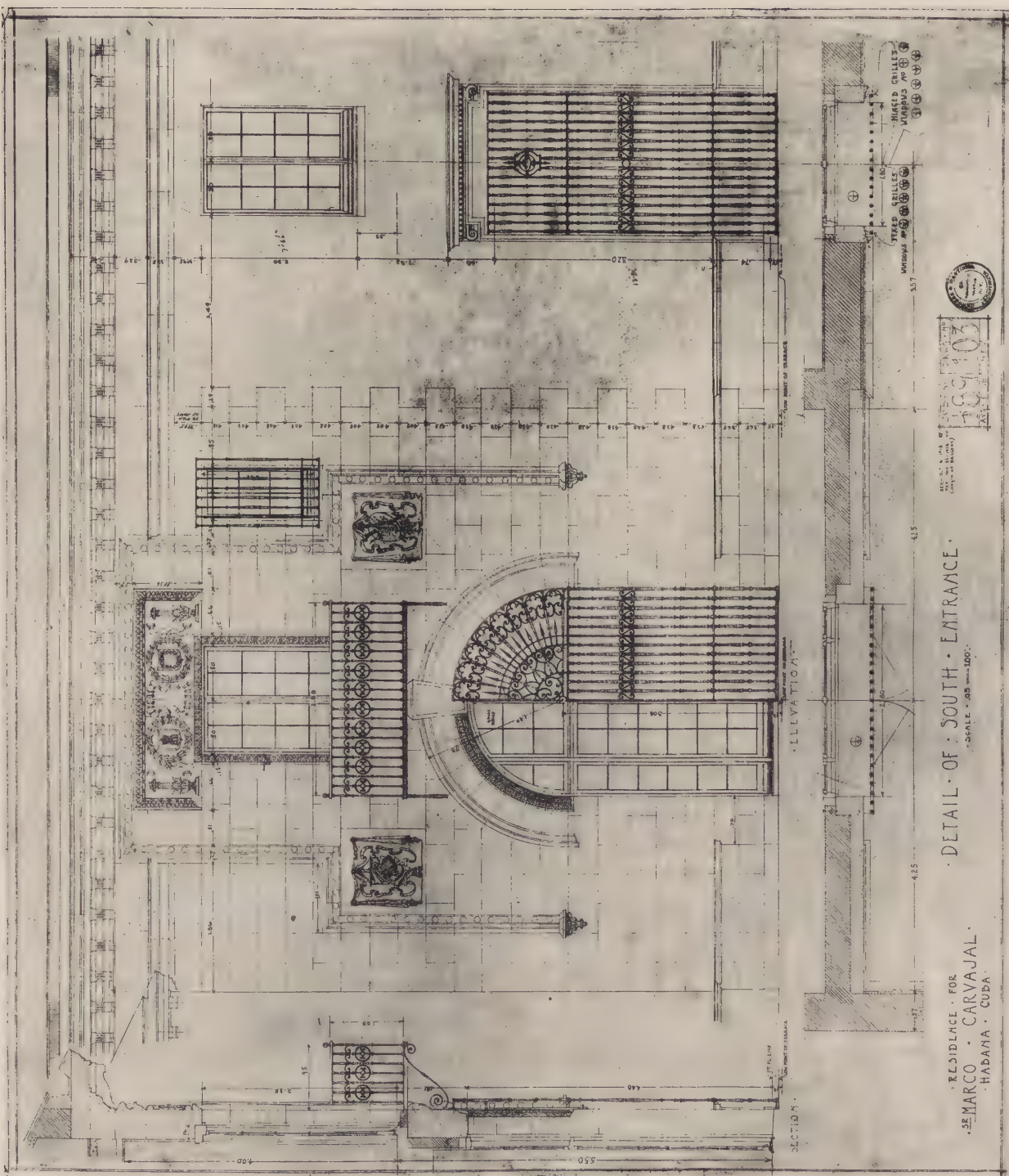


Figure 3. Detail of South Entrance, Residence for Sr. Marco Carvajal, Havana, Cuba. Carrère & Hastings, Architects.

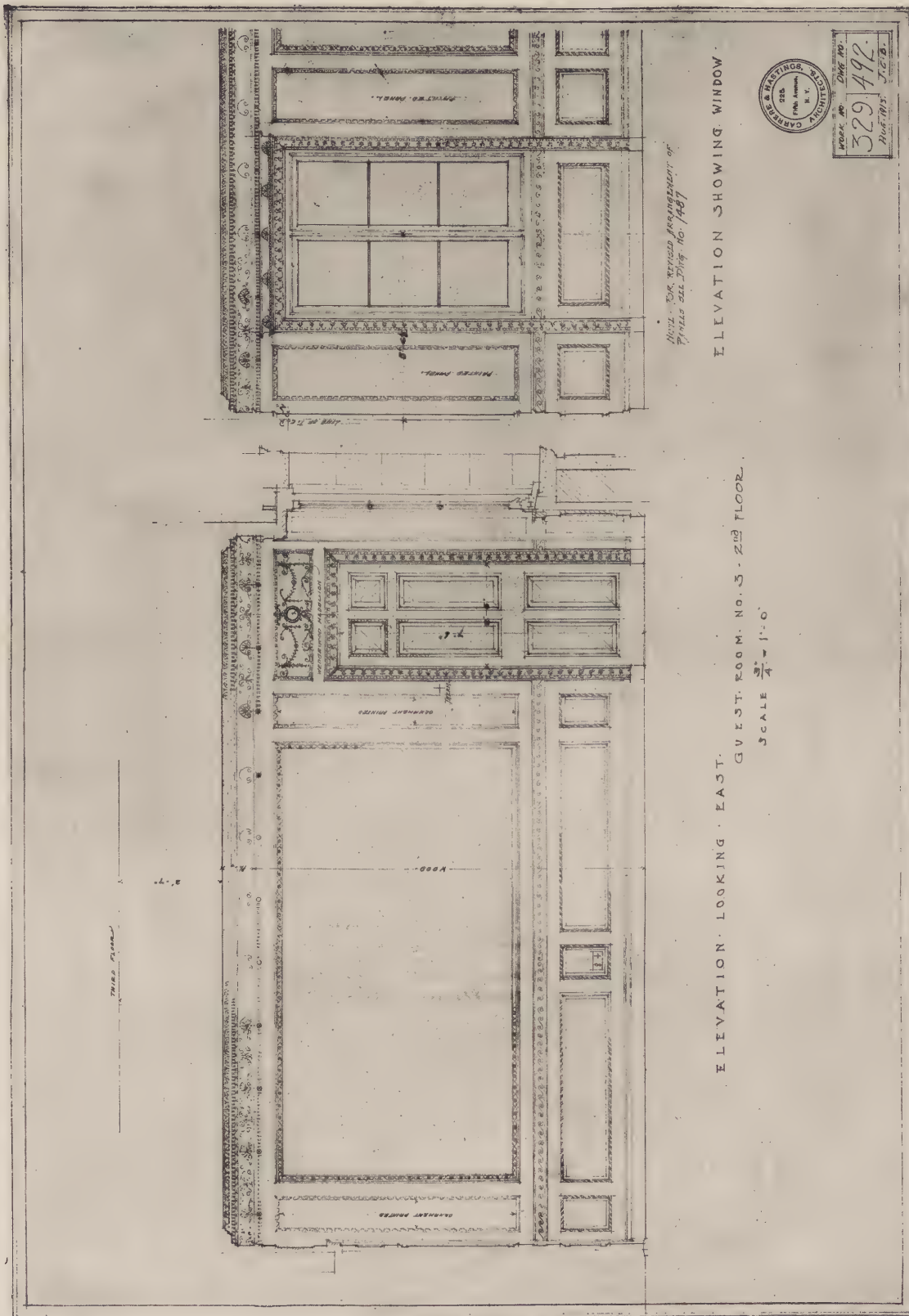


Figure 5. Interior Details. Carrère & Hastings, Architects.

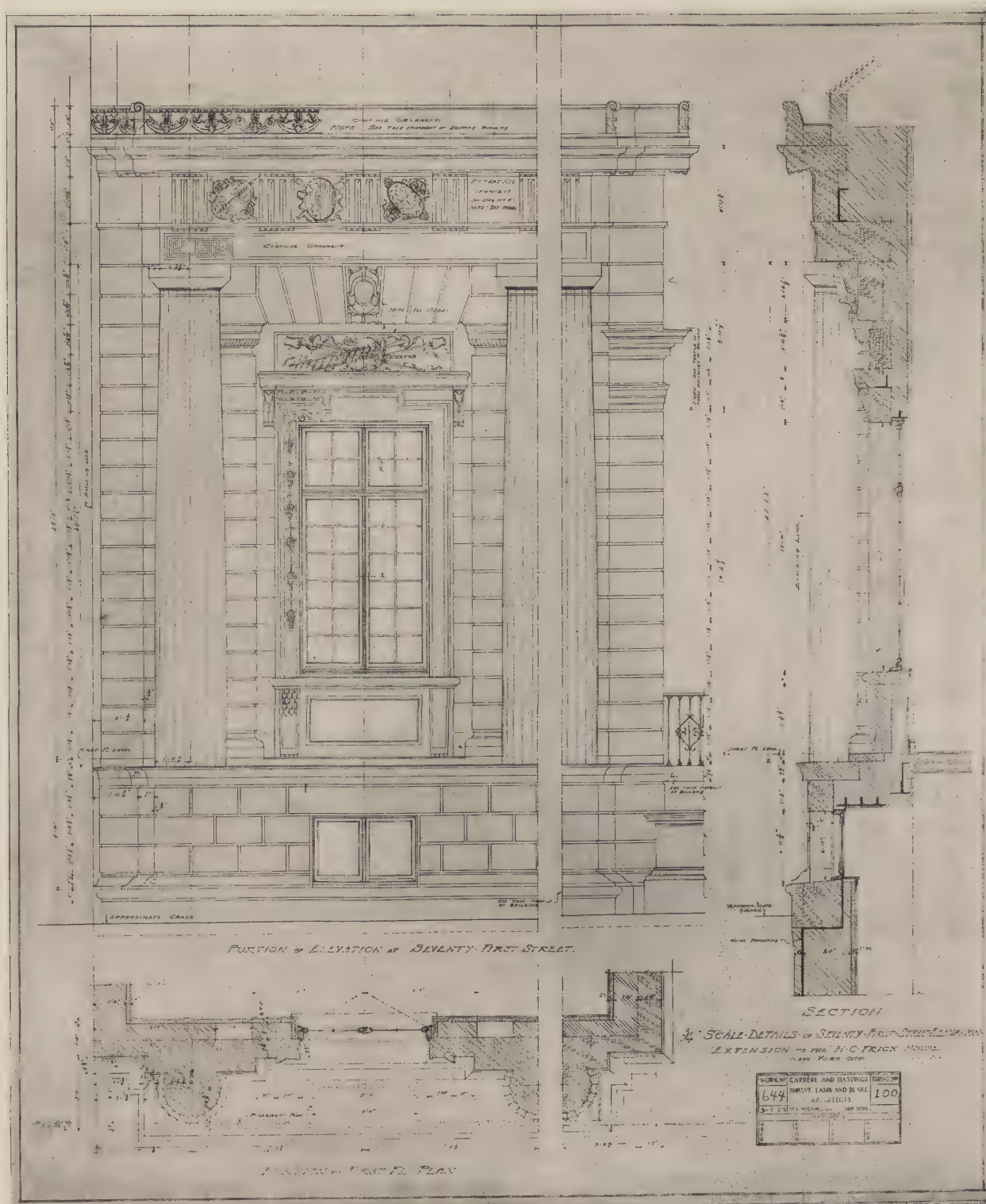


Figure 6. Extension to the H. C. Frick House, New York City. Seventy-first Street Elevation. Carrère & Hastings and Shreve, Lamb & Blake, Architects.

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windows indicated; ornament carefully worked out, section through the window over the door grille clearly defined. Notice on elevation how half of the grille in front of casement is shown and half of the casement is shown in the same opening. It is also noted which grilles are fixed and which are to open by noting the numerals of openings. Stone joints are figured, etc., all possible information for this part of the work is indicated; no questions could be raised from indications on this drawing how to estimate, detail, or execute the work as shown.

Figure No. 4 shows a working drawing of a stairway leading to the roof. Reinforcement slab under concrete steps is shown, waterproofing indicated, curbing and steel work for skylight noted, etc. Drawings of this kind are not necessary for estimating sets, for usually sufficient information to cover this work is indicated on the general drawings and materials necessary therefor called for in the specifications. Drawings of this character are very necessary, covering such points as stair work, windows and doors, and many other conditions required to be shown, for such drawings, as mentioned before, connect the specifications with the drawings.

Figure No. 5 is a detail of the interior of a room. The ornamentation is clearly indicated. In order to intelligently draw and figure a drawing of this kind, and as the actual rough work of the building is probably completed or finished enough for the contractor to obtain measurements at the job, a good rule to follow, is to note on all drawings for work, where rough construction has been started or completed

"All measurements to be verified at the building." For interior scale details it is not necessary to prepare all drawings at a large scale. Select the most important elevation, for example the wall showing the fireplace, draw this to large scale showing clearly indications of mouldings, cornices, detail of mantel, ornament, etc. The remaining drawings for the same room can be indicated at a smaller scale, say $\frac{1}{4}$ -in. to the foot, and wall panels, cornice, etc., noted. "All details are to be as shown on drawing number or elevation so-and-so." This method can also be followed for all details if repetition is necessary.

Figure No. 6 shows a detail of a building of a monumental character. Sectional details and part plans are shown and materials clearly noted. Stone work is figured from top of stone to top of stone, and to center to center horizontally. This drawing is a splendid example of an exterior stone scale detail. Shop drawings can be readily prepared therefrom. All dimensions have been carefully given. Ornament indicated and drawn well, but not carried out for needless repetition; notes are shown regarding the modeling of ornament; waterproofing indicated, etc.

Suggestions of economical ways of preparing drawings will be taken up later. Some of the examples illustrated with this article perhaps seem a little too elaborate for economical drafting. It must

be remembered, however, that many draftsmen enjoy making complete drawings and surely there should be joy in so doing; but as the drawings are merely a means to a definite result, unfortunately, dollars and cents must be taken into consideration. A good man will always judge what is necessary to draw fully, and where indication or part drawings only are required.

TRANSFER OF REGISTRATION

THE Committee on Public Information of the New York Chapter of the American Institute of Architects, has succeeded in establishing a precedent for the transfer of registration from New York State to other states through the National Council of Architectural Registration Boards. This is especially interesting to architects previously registered in New York without examination. A special examination known as a "Senior Examination" has been approved by the New York Registration Board and some of the difficulties previously encountered in attempting transfer to such states as Illinois, have been overcome.

New York architects registered by exemption who have, for more than ten years as principal or active head of an office, been actively engaged in the profession of architecture should apply to the New York State Board of Examiners for what is known as the "Senior Examination" of the National Council of Architectural Registration Boards. Architects of less than ten years' practice may apply directly to the National Council of Architectural Registration Boards for the "Junior Examination" if the applicant was not registered by exemption in New York and the regular New York examination is not accepted by the State to which transfer is desired. Both of these classes must also apply directly to the Secretary of the National Council of Architectural Registration Boards, 64 East Van Buren Street, Chicago, Illinois, for the necessary blanks and forms. They should designate the State to which transfer is desired, also the date and number of their home registration, whether by examination or exemption, and the number of years of practice as above defined. The Board then investigates the character and credentials of applicants, conducts any necessary examinations, and keeps the data on file for presentation to the authorities of any state in which the applicant may at any future time desire to obtain registration.

A fee of \$15.00 (par value in Chicago) should accompany the application to the Secretary of the National Council of Architectural Registration Boards. This fee is to defray expenses in connection with the investigation and examination and does not cover the individual state fees. A further fee of \$5.00 is charged by the Board for each additional state to which the documents are sent.

Those who desire further information concerning the advantages of registration through the National Council of Registration Boards should ask the Secretary of that Board for Circular No. 4.



POMPEIIAN DETAIL RESTORATION AND COMPOSITION BY F. DUBAN
FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

On the other side of this sheet is reproduced a plate showing two very good compositions by F. Duban which well present the character of Pompeian interior decoration and furnishing and of Pompeian street architecture.



DETAIL OF DOOR, PERIOD OF LOUIS XIV.
FROM "MOTIFS DECORATIFS" BY CÉSAR DALY

The plate reproduced on the other side of this sheet shows a most interesting Louis XIV. door treatment. It is marked by dignity and richness and shows an admirable mastery of design.



PENCIL SKETCH BY SAMUEL V. CHAMBERLAIN

The work of Samuel V. Chamberlain has become well known through the wide publication of his sketches and drawings in newspapers and magazines. The sketch reproduced on the other side of this sheet is a particularly good example of his manner and one of the best of his many sketches showing architectural subjects.



GREVILLE RICKARD

PENCIL SKETCH BY GREVILLE RICKARD, DETAIL OF MILAN CATHEDRAL.

The sketch shown on the other side of this sheet was made during Mr. Rickard's visit to Europe, 1921-22. At that time he travelled in England, France, Belgium, Italy and Sicily, spending a great deal of time in sketching, as he believes that sketching affords an unusual opportunity for training the hand in perspective, the eye to see correctly—to feel the depth and solidity of masses—in addition to furnishing keen enjoyment and stimulating the imagination.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE
OF DESIGN

THE PSYCHOLOGY OF SUCCESS

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson is explaining the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design. It is not intended as a substitute for personal instruction and criticism. The "Analytique" was treated in issues for February to September, 1921, the Class B Plan Problem and the Archaeology Problem in later issues.—ED.

WE WERE all taught when we went to school that all men are born free and equal. However, we soon realized that the equality was lost after birth. Some had wealthy parents; some had relatives or friends with "pull," and so forth. But in addition to any such inequalities that result from outside causes beyond our control, we soon see that inequality of attainment may result from such qualities as the ability to concentrate, patience, a willingness to work, and many other qualities of the same sort.

This is true in life; and true in architectural practice and the study of design. This study of design, especially as conducted by the Beaux Arts Institute, is very much like athletics—the medals go to the men *who win the sprint*, who top the highest bar in the pole vault, who keep a fast, even pace for miles in the distance race, and *have something left for the final sprint to the tape*.

To do these things the athlete keeps in training; the coaches feel he won't have a chance to win if he "breaks training"—he won't have the "punch"

at the moment it must be counted on. The study of design in the atelier system is just as gruelling a process as any sport. If you mean to win—if you want to get to the top—keep in training. At the final effort your opportunity may depend on the last ounce of energy you can put into the contest—don't waste your vitality uselessly before that time.

There is a lot of useless "working all night." Men who let their work slide—waste their time, or cover lots of paper, carefully drawing *the same thing over and over*—their minds seemingly partly asleep—who always have to "charrette" to finish a problem, are usually a poor looking lot when the Paris Prize second preliminary requires forty-eight consecutive hours of plugging—or when a competition makes a "charrette" a worth while thing.

Some men are able to work faster than others, and, of course, do not have to work as many hours to do the same quantity of work. The point I want to emphasize is this: some day it will be important for you to be able to count on your stamina, your vitality—your health, in fact, in a



Figure 1. Plan of Winning Design by D. McLachlan, Jr., Atelier Hiron, 1920 Paris Prize of the Society of Beaux Arts Architects.

PENCIL POINTS



Figure 2. Elevation of Winning Design by D. McLachlan, Jr., Atelier Hiron, 1920 Paris Prize of the Society of Beaux Arts Architects.

competition that means everything to you; don't let it dribble away foolishly because you may have gotten the idea it is "the thing to do." No athlete, of course, is "ashamed" to go to bed at 9 o'clock—you do not need any excuse for making the most of your time.

To show that it is possible to succeed in Beaux Arts work without a procession of charrettes, I mention one example. Billy Hough (see Figures 4 and 5, April PENCIL POINTS) as a senior at college (School of Architecture, University of Pennsylvania) was, in season, on the football team, basketball team, track team—varsity teams all—(practice four to six hours each day, bed at nine) was Art Editor of the *Punch Bowl*—a monthly humorous magazine—and of the class *Record*, took the part of the heroine in the Architectural Society play of that year, and also of the Psi Upsilon play—and was one of the best men in his class in design—a class that had in it four men who later won the Paris Prize—Ellington in 1911, Kirkpatrick in 1912, Simon, 1913 (see Figure 4 in this issue and Figure 163, PENCIL POINTS for September, 1922), and Sternfeld in 1914; Hough ended the year by winning the Stewardson Travelling Scholarship. When he came back to study for his Master's degree, he was admitted as a logist (1913) in both the Paris Prize and Rome prize final competitions—withdrew from the former to take the latter, and won.

This matter is one in which the critic of course will not feel called upon to give advice—it is up to each man to work out his own salvation.

At the same time, to get anywhere at all, it is necessary to work and work hard. Do as many problems as you can, put as many hours into each as you reasonably can—but make what time you do put into them count to its fullest extent by keeping at it so that your brain will be active—so that no line will be drawn without a good reason;—these reasons become sub-conscious in time, so it is all

the more important to start your training with a sensible idea of the proper use of time.

Do not be discouraged by not having immediate success. Some men do win big prizes on their first try; it may be a lucky chance, or it may be well deserved; but if we look at the record of the Prix de Rome competitions at the Ecole des Beaux Arts in Paris, the apex of school competitions in architectural design—we find frequently that a man has won after four, five, six or more attempts; that such a man is apt to be found "in the running" year after year, placing second, third or fourth at each try. A man has to be good to place second in the Paris Prize Competition three times in succession as did Burnham Hoyt in 1912, 1913 and 1914.

In the 1911 competition Simon was placed fourth. The jury in its report, stated that his work was clever, showed great ingenuity and imagination, and suggested that if this designer submitted to the regular discipline of the Beaux Arts training he should develop well. When he tried again and won in 1913, (see Figure 4) after trying to make his design logical and conservative with this report always in his thoughts, the jury's report expressed the one regret that his work was perhaps lacking in imagination, and called attention to the brilliant imagination shown in the drawings of Hoyt placed second.

You must remember that the jury is "human"—it is not a fixed and immutable thing like a mathematical quantity. You must get used to the variability of the standard of awards in jury decisions. The Beaux-Arts Institute jury varies in personnel somewhat with each jury, but even if the jury were composed each time of the same men there would be a difference of opinion on matters of taste at least, for art and taste are not mathematical entities that can be closely limited and sharply defined.

Sometimes the jury seems "lenient"; sometimes "hard-hearted"; sometimes stressing "the idea"; at

(Continued on page 54)

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Figure 3. Detail of Elevation, Winning Design by D. McLachlan, Jr., Atelier Hiron, 1920 Paris Prize of the Society of Beaux Arts Architects.

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Figure 4. Elevation of Design by Grant Miles Simon; Winner of the Paris Prize of The Society of Beaux-Arts Architects in 1913.

THE LIBRARY IN THE DRAFTING ROOM

BY JOHN V. VAN PELT

SOME years ago a gentleman caught the idea of writing about architecture. Perhaps he was lured by visions of enormous profits from the sale of his books. His name was Vitruvius.

Since that day his tribe has waxed mightily in strength. The beautiful engraving of Lepautre, De Neufforge, Volpato, Piranesi and Pfnor has been displaced by photography, the intensive studies of Durm, Dörpfeldt and Viollet-le-Duc have been eclipsed by "The Significance of the Fine Arts."

A fairly representative list of books covering only one style or period may cost five hundred dollars. Ten thousand is not too much to spend on a really complete review of the various styles that have spread, creeping, like mould, over different spots of our earth at successive periods of time. Yet no one will say that before this wonderful shower of documents there was no beautiful architecture. Perhaps Adam and Eve did confine their development of art to fashion design, but we have heard with envy of the beauties and joys of Ninevah and Tyre. The loveliness of the hanging gardens of Babylon (not Long Island) are a nursery tale. Tut Ankh Amen has so vivified the wonders of his age that an Egyptian Renaissance is imminent. And these glories all happened before Vitruvius made his pile.

Mob psychology is a curious thing. Some one advocates the League of Nations and is successfully squelched by the representative of the Will of the People who at the next election nearly loses his seat for doing it.

You and I are different, but if this article were to advocate books as a stimulant to the imagination many would agree with me. If I turned about and argued that they are a hindrance and stumbling block to creative genius, again many would agree with me. Let us take a middle course. What is the good and what the bad in an architectural library?

There are two ways of using books if one excludes the method of the "Differentist" who only glances through a book to make sure some old codger has not cribbed the design he is evolving. Some designers make compositions that are new and formed to fit the problem in hand, but from whim or fancy or affection recall the feeling, the perfume of a period of the past. The recollection of a previously experienced agreeable impression or pleasure is a source of keen enjoyment to the majority of the human race. Therefore this reincarnation of the past, contributing as it does to charm those familiar with an earlier art, is defensible on perfectly logical grounds. The application must be reasonable. A Chinese temple or a pagoda covered with carved idols and steeped in the mysteries of the worship of heathen gods would not be in harmony with the severe cult of the Society of Friends. But the ritual of the American Episcopal Church

has not varied markedly from that of the Anglican Church or even from that of the Roman Church of the Twelfth and Sixteenth Centuries. Indeed a modern Beaux Arts Student's design served hot on the dish from France might be more out of keeping with the Churchly feeling than a pagoda.

Another group of designers, possibly fearful lest they may be unable to catch the refinement and beauty of an earlier masterpiece, having selected something on which time has set its stamp of approval, copy their model with skillful exactness and with lack of either originality or personal pride in their work.

The forceful and beautiful creations of Richardson, McKim, Bertram Grosvenor Goodhue, Henry Bacon, Louis Ayres, are examples of the first method. They differ from any particular building of old, but exhale a fragrance of another time and are enveloped in an atmosphere of refined scholarliness that calls forth immediate response from the initiated lover of art. Who dares say they are less worthy than the Paris Opera House or the Gare d'Orleans of more modern France.

We are all familiar with revered reproductions of the Maison de François Premier and with our American versions of the Giralda Tower and the former Herald Building. They also are beautiful, but the initiated regrets his knowledge. He feels that something has been taken away from an older artist whom he loves because of the gift of pleasure he has already received.

How then shall an architectural library be used?

When I was attempting my first steps in outdoor painting, one of the men who had very definitely "arrived" told me never to try to find the color of any object by looking fixedly at and matching it on my palette. "Pass your eye rapidly over the whole panorama before you," he said, "and set down the impression of the color and value that you *then* receive." The process of assimilation of the atmosphere created by the architecture of an earlier period is not unlike that. If the designer studies one building only he is likely to forget that he is a creator of art and degenerate into a reproducer. He would better purchase a good measured drawing of his model, have it photographed to the required dimension, blue-print the photograph and turn it over to the contractor for bids. If he wishes to remain an artist it would be safer not to look too long at any one model, but to assemble the books and photographs that show all the masterpieces of the period selected, go through them from beginning to end, many times if necessary, till he is steeped in the feeling they evoke and then close them, put them away and evolve his own design, a composition that solves the special problem in hand.

(Continued on page 54)

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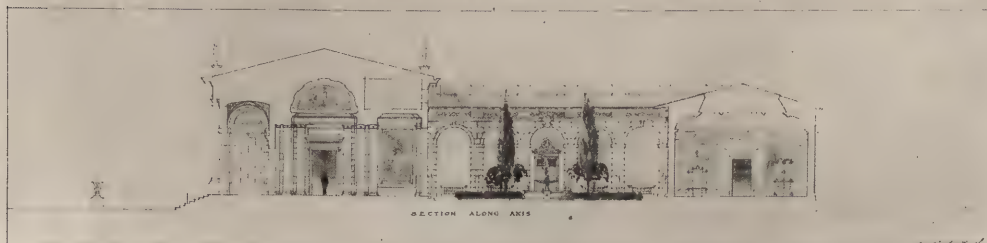


*Design Submitted by Charles H. Dornbusch.
Le Brun Travelling Scholarship, 1923.*

PENCIL POINTS



LE BRUN SCHOLARSHIP COMPETITION



*Design Submitted by Wilfred W. Faulks.
Le Brun Travelling Scholarship, 1923.*

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COLUMBIA ATELIER DINNER

THE Atelier of Columbia University held its annual dinner at Keen's Chop House in Forty-fourth Street, New York, on April 28.

Forty members and guests sat at the tables, which were in the form of a large "C."

After an excellent five-course dinner was served, Walter Conley, *Massier*, called upon Prof. William A. Boring, Director of the School of Architecture, who gave a short resumé of his recent trip through the Mediterranean and the adjoining countries. J. V. Van Pelt, Director of the Atelier, told of some of his interesting experiences as a student at the Ecole des Beaux Arts in Paris. John J. Schumann, Jr., former Paris Prize Logist, and former *Massier* of the Atelier, gave a most instructive talk on co-operation and the atelier spirit.

A small jazz orchestra composed of men of the atelier furnished entertaining music during the evening.

Unfortunately two of the three critics of the atelier, A. E. Flanagan and Harvey W. Corbett, were ill and unable to attend.

This dinner marked the close of a most successful year for the Atelier.

CHICAGO ARCHITECTURAL EXHIBITION

THE Thirty-sixth Chicago Architectural Exhibition at the Chicago Art Institute was held May 1 to May 31. The exhibition was under the auspices of the Chicago Architectural Club, of which Clarence W. Farrier is President; the Illinois Society of Architects, and the Chicago Chapter of The American Institute of Architects. Clare W. Hosmer was Director of the Exhibition.

The catalogue of the exhibition, a handsome bound book, has been received at the office of this journal and it is a work of which any architectural exhibition might well be proud, both because of the character of the exhibits it represents, and because of the excellence of the book itself in the matter of preparation, engraving and printing. This catalogue and the index of exhibits show that the exhibition covered a large range of well selected works of architecture and of the arts directly contributing to architecture.

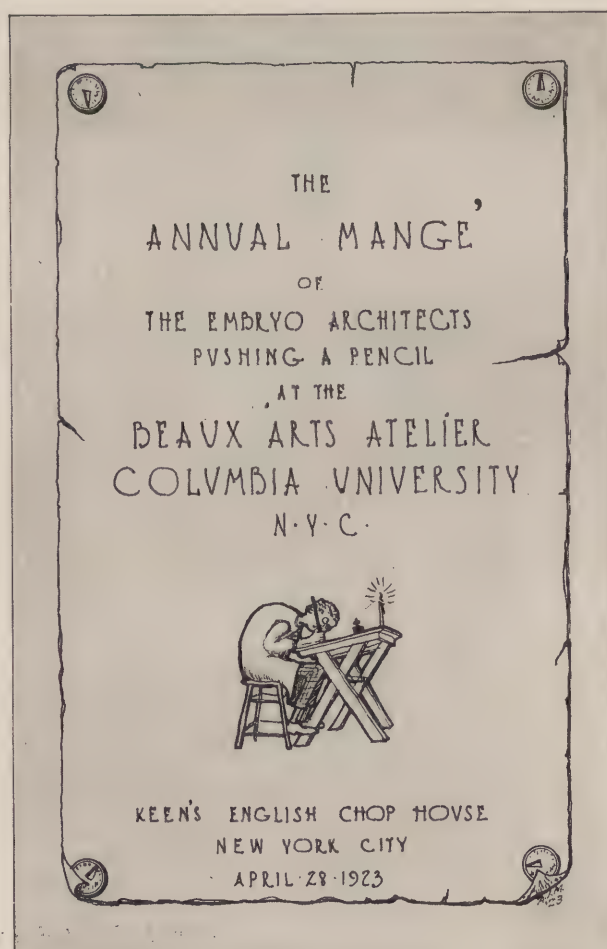
UNIVERSITY OF MICHIGAN

THE College of Architecture of the University of Michigan is to have a European scholarship, through the generosity of Mr. George G. Booth of Detroit. The scholarship will be awarded for the first time at the end of the academic year 1923-24 and will be in the sum of \$1,200.

The successful candidate is to be given considerable freedom in the choice of his field of work and observation abroad, and is to be selected by the architectural faculty on the basis of his total record as a student, ability in design, and fitness to do independent work abroad.

The University has had a course of lectures on art topics of unusual interest, the titles of which are given below: Mr. Lorado Taft, "Glimpses of a Sculptor's Studio;" Professor Frank J. Mather, "The Newest Painting;" Professor Alfred M. Brooks, "Gothic Spires;" Dudley Crafts Watson, "Modern Painting;" Henry Turner Baily, "The Miracle of Art;" Professor H. H. Powers, "Michelangelo and the Sistine Chapel;" C. R. Ashbee, English architect and craftsman, "The Rebuilding of Jerusalem;" Professor Robinson, "Recent Excavations at Sardis and Other Cities of Asia Minor."

There has also been a series of exhibitions of special interest to architectural students among which were a collection of drawings by Italian masters including work by Michelangelo and Andrea del Sarto; the International Collection of water colors; Russian paintings by Roerich; marines by Haley Lever; water colors by Haffner, Tuttle and Baker; etchings by Robert Fulton Logan; drawings by Samuel Chamberlain, Edward A. Schilling, and R. W. Tempest. The original Chicago Tribune drawings were also shown.



Cover Design for Menu, Columbia Atelier Dinner.

PENCIL POINTS

HENRY BACON RECEIVES THE GOLD MEDAL OF THE AMERICAN INSTITUTE OF ARCHITECTS

AN IMPRESSIVE ceremony, of a beauty and dignity befitting the occasion, signaled the presentation of the Gold Medal of The American Institute of Architects to Henry Bacon, as a tribute for his design of the Lincoln Memorial. Only thrice in its history has the Institute presented its Gold Medal to one of its members. Mr. McKim received the medal in 1909 and it was given to Mr. Post in 1911. On the evening of May 18, at the end of the Fifty-Sixth Annual Convention of the Institute, Henry Bacon received this emblem of recognition from the hands of President Harding.

The ceremonial of presentation of the medal took place within the great architectural setting of the monument and its approaches.

At the conclusion of the Convention dinner, which was held under a great marquee at the east end of the Reflecting Pool, the officers and members of the Chapters present at the Convention, together with representatives of the groups composing the Fine Arts and the Craft and Building organizations that participated in the work of executing the memorial, assembled at the end of the Lagoon opposite to the building.

Wearing robes the design and color of which differentiated the various groups, and bearing banners, the participants moved in procession towards the memorial, one column on either side of the Reflecting Pool. Drawn by men on either shore, a barge, decorated as were the barges of State in historic times, moved slowly between the columns of its escort. It bore the recipient of the medal attended by high officials of the Institute. The fluttering banners, the colorful robes and the flare of torches borne by the men on the shores made a brilliant scene to which the reflections in the rippling water of the Lagoon added a note of beauty.

When the barge reached the west end of the Reflecting Pool, Henry Bacon, accompanied by Daniel C. French, and Jules Guerin, ascended the steps of the Memorial to the box in which were President Harding and Chief Justice Taft.

William B. Faville, President of the American Institute of Architects, then introduced Chief Justice Taft who introduced President Harding.

President Harding made an address in the course of which he declared: "No man could have seen in his mind's eye the vision of this supremely appealing structure, or could have conceived it as the most appropriate memorial to the life and work of Lincoln, unless he was so fortunate as to sense the genius, the character, the simple aims and unquestioning integrity which were the dominant traits of the Emancipator.

"This occasion," declared the President, "not only envisages the career of Lincoln, but the progress of the nation which, by his patriotism and devotion, was saved to play its full part in the affairs of our world and our civilization."

"The dignity and character of the memorial," the President said, "have won it rank among the architectural jewels of the world."

Summing up the significance of this memorial, he said:

"Here are typified the qualities which made Lincoln at once the dreamer and the doer, the designer and the builder.... Surely, as we survey it, we may hope that, in building the institutions of the Nation which Lincoln saved, there may be a like fidelity to the ideals which guided him."

At the conclusion of his address President Harding presented the Gold Medal of the Institute to Mr. Bacon, who spoke briefly in response, terminating a ceremonial that, it is to be sincerely hoped, marks the revival of the art of pageantry as a fitting means of expressing the dignity and beauty of great occasions. It was an event that made an ineffable and inspiring impression on everyone present. It was a signal success for the special Committee that planned and directed the Pageant. The chairman of this Committee was Mr. Howard Greenley, President of the Architectural League of New York, who was assisted by Mr. James Monroe Hewlett, President of the Mural Painters' Society. Mr. Irwin S. Porter was in charge of all administrative arrangements for this committee. This pageant marked another step in the progress of Mr. Green-



HENRY BACON

ley's consistent effort to give events of our modern life the beauty and expressiveness that characterized all notable occasions in every great civilization of historic times.

GEORGE WASHINGTON UNIVERSITY ARCHITECTURAL CLUB

THE District of Columbia Chapter of the A. I. A. held a joint meeting with the Architectural Club of George Washington University, in the University's architectural building, April 25. A highly creditable exhibition of student work was being held there at the time, which included Beaux Arts problems, freshman order problems, charcoal and water color sketches and some clever cartoons depicting Beaux Arts life. Refreshments and an entertainment were furnished by the students. The feature of the evening was the opening of King Tut's tomb by Lord Carnivorous and Cartersink revealing many relics of the king and his corps of architects. King Tut himself then came to life and called for entertainment. This gave two girls from the embryo architects squad a chance to interpret the dance of good old Egypt. Many of the audience saw themselves portrayed among the royal architects who were called in to serve the fancies of the dancing girls under protest from the royal treasurer. Everyone enjoyed this opportunity to become better acquainted and the students expressed the hope that the local chapter would honor them with another visit soon.

IN A letter recently printed in the *New York Times*, Theodore R. N. Gerdes, M. E., calls attention to the fact that the air of our streets contains a varying but considerable, and harmful, quantity of exhaust gases from automobiles. He points out, among other things, that the air currents caused by tall buildings tend to alleviate the condition.

He suggests that instead of using ventilating systems drawing air from near the street level, diffusing automobile exhaust gases into the interior, architects should plan shafts or stacks of maximum possible height for new buildings, so that air of the best quality could be secured for ventilation.

PENCIL POINTS



*A Life Study in White Chalk on Black Paper by Miss Elizabeth Whittingham.
See Illustration on page 53.*

PENCIL POINTS

SCHOOL OF APPLIED DESIGN FOR WOMEN.

ON THIS page is shown at reduced size a sheet of remarkably good chalk drawings, by Miss Elizabeth Whittingham, a first-year student at the New York School of Applied Design for Women. Miss Whittingham was awarded the scholarship prize for first-year life drawing in the Illustration Department. These little studies are done with directness and sureness and they show unusual keenness of perception. The main point of interest, however, is the fact that these drawings show the possibilities of the use of small sketches of this kind in the study of life drawing. One of the drawings is reproduced on page 52 at the full size of the original.

An interesting exhibition of the work of students was held at the school beginning May 15. The work shown included drawings by students in the Department of Architecture and Interior Decoration, also in various departments devoted to elementary training in illustration and to designing for various industries. In the last-mentioned field this school has long held an important position.

APPRENTICESHIP CLASSES FOR THE BUILDING TRADES.

THE opening of the Classes for Plasterers' Apprentices of the Trade Extension Courses at the South Philadelphia High School by the Philadelphia Building Congress, of which D. Knickerbacker Boyd is President protem, marks a step in the progress of training artisans in the building trades, a much needed work.

On August 17, 1922, The Philadelphia Building Congress created a Committee on Vocational Guidance and

Apprenticeship to co-operate with the Boards of Education of the City and State, and with other educational bodies, and with employers, and employees' organizations, and others, in making the building trades and crafts attractive to young men, and in affording fullest means for the education and employment of efficient workers.

As a result of the deliberations of this Committee, a Sub-Committee on Plastering was appointed. These two committees have brought about the establishment of the classes in a remarkably short time. The course of study is thoroughly practical and well-rounded.

The Board of Education authorized last December the organization of extension classes in plastering and other building trades in the South Philadelphia Evening High School and it has been proposed that the next classes to be formed shall be for the education of apprentices in the bricklayers trade. This kind of educational work is clearly of the greatest importance to architecture, as the need for greater numbers of skilled artisans is well recognized and the Philadelphia Building Congress deserves commendation for its work in this direction.

COOL ROOMS IN A TROPICAL CLIMATE

UNDER the title "Cool Rooms in a Tropical Climate" the May issue of *Hotel Management*, shows a plan, photographic views and detail drawings of the New Colonial Hotel, Nassau, Bahamas, The Munson Steamship Line, owners, Kenneth M. Murchison, architect.

The text, conveniently arranged in the form of captions to the pictures, explains the points of this excellent and interesting solution of a practical problem in design. *Hotel Management* is published at 342 Madison Ave., New York City.



Sheet of Ten-minute Studies from Life by Miss Elizabeth Whittingham, First Year Student at the New York School of Applied Design for Women. Miss Whittingham Was Awarded the Scholarship Prize in First Year Life Drawing. Instructor, Mrs. Brenetta H. Crawford.

PENCIL POINTS

THE STUDY OF DESIGN

(Continued from page 44)

others, looking more particularly at the study that has been spent on the idea, etc.

This variability is true of life—of clients. It is a well known fact among painters that a canvass may be rejected by the jury for an annual exhibition—and if sent to the exhibition at the same place the succeeding year, be accepted. It was turned down the first time not because it was unworthy, but because it had no particular appeal to the men who composed that particular jury. Fortunately architectural design is less subject to caprice or questions of personal taste than painting; the “practical requirements” of architecture always tend to keep its feet on the ground.

For all these reasons one should avoid “playing to the jury,” if you know who they are to be, for you may guess wrong on their predilections—or you may not know one of them who may turn out to be the strongest, the most persuasive (or most stubborn) among them.

Do your best as you see and feel and understand architecture—and take your medicine philosophically, studying your failures in comparison with premiated work in a sincere effort to pull up closer in the next contest. Hunt for the faults—not in the jury, but in your own work. Is it, honestly, the best that could be done. Are there not some places that you feel yourself could have been improved, had you had a little more time? Was your trouble, perhaps, in not laying out your time wisely?

Certain things stand out as necessary for success with a jury in competitions in architectural design.

1—The “parti” must be good—it must “solve” the requirements of the problem—cleverness of presentation, of detail, of the study of certain parts, may all win “commendation”—but they never win a competition for a scholarship or a prize if the parti is faulty.

You will at once see that here success depends to a great extent on good thinking at the time of making the esquisse.

2—Drawings must be well studied—there should be no appearance of awkward corners or undigested poché in plan, or ill-chosen or badly placed ornament or features in elevation; both elevations and plan must have good proportions.

3—The design must be interesting—not commonplace. We have already spoken of the work of Burnham Hoyt in this respect. Of course “there is a time for everything” and it would be foolish to attempt to dress up a problem with all kinds of “folderol” if it is uncalled for. There is, at times, a value in the most extreme simplicity—but the greater the simplicity, the greater the study required to make that which is put in absolutely satisfying. A design may be imaginative even though dignified and severe, as may be seen in McLachlan’s Paris Prize of 1920—another monument problem.

4—The design must be well presented, to make the psychological appeal at the first sight of the jury on which so much depends. This means well drawn, and well rendered; the architecture well modelled, the third dimension well expressed; entourage well studied in relation to the architecture and rendered in proper value; it also means that the sheet must be well “composed” as a sheet—some part emphasized as a focus and everything else arranged with this in mind; the different drawings arranged to “compose” with each other, borders made to work with the lines of the “chassis” or stretcher frame.

In a scholarship competition it is also essential to have all drawings equally complete—plan, section, elevation, all carried to the same point, and not one elaborately finished at the expense of the others.

Good drawing and presentation alone, as we have just said, will not win a competition—but they always insure a careful consideration on the part of the jury, while a poorly presented drawing is at a great disadvantage in this respect.

And finally, do not work for immediate results. Try to work toward a future goal of ever greater knowledge of design, a surer sense of proportion, an increasing vocabulary of forms, greater ability at expressing and presenting this knowledge, and a sound method of making the most of conditions, of available time, of procur-

able, documents and of sound criticism. With one’s endeavors pointed in such a general direction, success will come one day or another—for come it will.

THE LIBRARY IN THE DRAFTING ROOM.

(Continued from page 47)

It is unsafe to attempt to tell any artist how to work. From one point of view it is useless. I do not actually know that Mr. Bacon or Mr. Ayres or Mr. Goodhue follow the method I have suggested. They may refute my implications. I do believe, however, that such a use of books would be less likely to result in slavish copies than the fixed examination and study of a single model to which I have found many students and draftsmen prone.

The sum of all I have said comes back to the basic fact that the really great artist will always be a creator. He will use any tool, but his expression will come from within himself. A library cannot create. It is only one of the important tools to be turned to great account in the hands of a master.

AWARDS IN COMPETITION FOR A LAMP DESIGN.

THE jury for the competition for lamp designs held recently by the Decorative Arts League under the auspices of The Art Alliance of America, has announced the following awards:

Mr. Warren W. Ferris of New York City was awarded the first prize of \$300. The jury considered his design from the points of beauty, shape, proportions and harmony of color. Miss Mary G. Bishop of Montreal secured the second prize of \$200, her specimen receiving this high honor as much for its delightful simplicity as for its actual beauty. Miss Ann Priest of Baltimore received the third prize of \$100, and Miss Flora E. George, Carlisle, Penna., Miss Jessie Rummel, New York City, and Miss Carla Rasmussen, Astoria, L. I., all received prizes of \$100 each because the designs submitted were particularly adaptable to the purpose for which they were created.

On the score of beauty combined with practicability and usefulness, Miss Bishop’s design was awarded \$400 extra and given the Blue Ribbon.

An interesting exhibition of designs was held by the Decorative Arts League at 65 East 56th Street, New York City, at the conclusion of the competition.

The purpose of the Decorative Arts League is to make available decorative objects of genuine merit at the price of the commonplace.

BUREAU FOR PART-TIME WORK

AN ORGANIZATION which specializes in providing women of education and special training for part-time work as secretaries, typists, bookkeepers, file clerks, etc., is the Bureau for Part-Time Work, 105 West 40th Street, New York City. This service makes available capable women who because of home duties, or other work or studies can take only part-time employment. Since the amount of time they are able to give is all that is required in many cases, this kind of arrangement works out nicely for the architect or other employer as well as for the part-time worker. The organization has on its advisory board a number of men and women prominent in educational, vocational and social-welfare work.

A MOST interesting and valuable collection of material for study and reference is found in the twenty-four page special insert in the May issue of *The Modern Hospital* since it contains reproductions of the designs to which prizes or honorable mention were awarded in the competition for the plans of a small general hospital, conducted by *The Modern Hospital*. The illustrations show plans, elevations and other drawings while the text provides a description, and a critical analysis of each of these designs. *The Modern Hospital* is published at 22 East Ontario Street, Chicago, Ill.

PENCIL POINTS.



JOHN POSTLER

JOHN POSTLER, President of the Cincinnati Architectural Society, for 1923, was born in Cincinnati in 1889. He received his early training in the local "Tech" school and then entered the employ of Garber & Woodward, architects, Cincinnati. It was in this office that Mr. Postler received the greater part of his training in architecture.

For two years he studied the problems of the Beaux-Arts Institute of Design in the Atelier of the Cincinnati Architectural Society.

In 1921 Mr. Postler toured Europe, going to France, Spain, Italy and England. During this time he made measured drawings of many important buildings. He also brought back many sketches and rubbings, which he had found time to make, from fine examples of old-world architecture.

Upon his return to Cincinnati, Mr. Postler once more entered the office of Garber & Woodward, and in 1922 he was made an associate of the firm.

ADDRESSES WANTED

WE SHALL appreciate it if those whose names appear in the following list will send correct address to us.—PENCIL POINTS.

C. B. Ross, Berkeley, Calif.; Don Bradford, Los Angeles; Samuel Finely, Los Angeles; George P. Hales, Architect, Los Angeles; J. D. Johnson, Los Angeles; Isabel C. Martin, Los Angeles; Taylor M. Uhler, Los Angeles; F. Wynkoop, Long Beach, Calif.; Ernest E. Hunt, Ocean Park, Calif.; O. A. Jenkins, San Francisco; C. C. Maybach, San Francisco; Henry H. Brock, Washington, D. C.; I. C. Garber, Atlanta, Ga.; W. Moir, Chicago; H. C. Peters, Chicago; R. S. Wilkinson, Chicago; V. A. Booth, Indianapolis; Arthur B. Christensen, Atlantic, Iowa; Lewis A. Clapp, New Orleans; Kenneth Kingscott, Lansing; Dayu Doon, Minneapolis; J. E. Erickson, Minneapolis; Thomas L. Martin, St. Louis; H. Peterson, Kansas City, Mo.; E. F. Dunning, Brooklyn; C. A. Friedel, Brooklyn; R. E. Laskie, Buffalo; Robert A. Cox, New York City; Eldridge Hedges, New York City; Louis Sonntag, New

York City; Fred A. Seumens, North Pelham, N. Y.; Henry A. Martin, Syracuse; C. H. Culpepper, Raleigh, N. C.; Prof. J. N. Bradford, Columbus, Ohio; F. W. Bohne, Youngstown, Ohio; J. W. Schmidt, Tulsa, Okla.; John Bogdan, Philadelphia; J. Wheaton Lynch, Philadelphia; W. R. Wallace, Philadelphia; C. G. Dunnells, Pittsburgh; Carl L. Baumann, Port Huron, Michigan; James B. Brown, Dallas; C. H. Perry, El Paso; James Baugh, Waco; B. C. Underwood, Seattle; Juan Acevedo, Mayaguez, Porto Rico.

PERSONALS.

C. D. HILL AND CO. AND J. W. DEHNERT, Architects, have removed their offices to Suite 501 Kress Building, Houston, Texas.

FREDERICK C. KLAWITER has opened an office for the practice of architecture at 1611 Pioneer Building, St. Paul, Minn.

JOHN F. WEHRELL, formerly with New York and Sawyer, is now in the office of Howells and Hood.

MICHAEL A. CARDO has removed his office to 405 Lexington Avenue, New York.

HINES AND FISHER have opened an office for the practice of architecture at Room 205 Central Building, Hagerstown, Md.

ROBERT A. LOCKWOOD has opened a studio at 30 East Ontario Street, Chicago, Ill.

WOOD AND BRADNEY, Architects, have removed their offices to 70 Andrews Building, Buffalo, N. Y.

SAMUEL S. OMAN AND SAMUEL LILIENTHAL has formed a partnership for the practice of architecture and engineering with offices at 64 West Randolph Street, Chicago, Ill.

EDWIN F. GUTH has been made president of the new company formed under the style of The Edwin F. Guth Company, in which are united the interests of the St. Louis Brass Mfg. Co., and the Brascolite Company of St. Louis. Mr. Guth has been a prominent figure in this field for more than a score of years.

HOTEL REQUIREMENTS

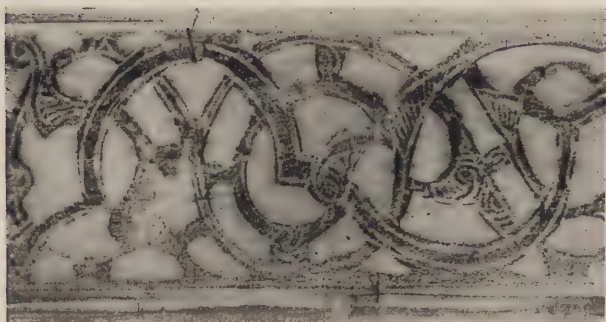
(Continued from page 25)

most often called upon to design. If the architect has not allowed enough working space to permit of the correct and economical operation of the house, this mistake must eventually be made up for by the operator.

It is well to remember that a point that is too frequently overlooked in hotel planning is the necessity for ample provision for carrying on the work of caring for the guests—for the kitchens and their dependencies, and for the comfort and convenience of the employees. No one but a hotel man who has had to operate in cramped quarters can fully appreciate the seriousness of lack of proper provision in this respect. The Hotel Pennsylvania has, in round numbers, two thousand three hundred employees, and the Waldorf-Astoria has one thousand four hundred. In both instances the great percentage of these employees are in the catering department, the restaurants, and kitchens, where they must have adequate space in which to work. Provision must also be made for the comfort of these employees for their feeding and care. They must have lockers, shower baths and many other conveniences that need to be taken into account in making the plans for a hotel. Though everything must be done for the comfort of the guest, for it is from him that the hotel's revenue comes, this effort will count for little unless the hotel has ample working space and an adequate and contented organization. It has always been that the losses come from the back of the house.

(To Be Continued.)

PENCIL POINTS



Rubbing of Ornament.

MAKING RUBBINGS.

WE ARE in receipt of a letter from Wm. L. Hoffman, Assistant Professor, Department of Architecture, the Pennsylvania State College, describing a very useful method of making rubbings of architectural detail under difficult conditions. At the head of this column is reproduced at reduced size, a portion of the rubbing referred to, while extracts from the letter are printed below:

"I read with much interest the description of the method used in making 'rubbings.'"

"Last summer while doing some research work in the Philadelphia Memorial Hall, I had occasion to make 'rubbings' of some grille work on an Arabic doorway from a mosque in Cairo. All of the usual methods failed to obtain the results, inasmuch as the depressions being large, the paper had a tendency to crack and tear.

"One of the museum guides came to me and showed me how I might get a 'rubbing.' He first placed a sheet of carbon paper over the grille, carbon side up; next, the paper on which the 'rubbing' was to be recorded, and then with an ordinary scrubbing brush he rubbed the surface. I never saw 'rubbings' produced more quickly or with better results.

"I am enclosing herewith a small sample of the results obtained."

AMERICAN ACADEMY IN ROME

FROM a letter recently received by C. Grant LaFarge, Secretary of the American Academy in Rome, from Gorham P. Stevens, Director, we quote the following:

The death of Mr. Charles D. Norton has come to every one of us as a great personal loss. He was in Rome last Summer with his family for a week or so; he was in excellent spirits and he seemed to be in good health. You all will miss him tremendously in your meetings. He gave generously of his money, time and energy. It will be hard to adjust ourselves to his loss.

A new student has registered with us in the School of Fine Arts, namely, a Harvard Fellow in Architecture. A composition by Sowerby, Fellow in Music, is to be produced next Sunday at the Augusteo under the direction of the celebrated English director Coates: the piece is for two pianos and full orchestra. Mr. Coates has already arrived—he is staying with Mr. Lamond. Mr. Lamond has bought a small closed Fiat, which is proving of the greatest use to his Department of Music.

The whole Classical School has started on its Greek trip under the guidance of Prof. Van Buren. They were in Pompeii and Naples last week, and they were to sail last night from Brindisi after a day at Taranto (which has an important museum of Southern Italian antiquities). This year, for the first time, we have been able to secure a 50% reduction and reserved compartments on the Italian Railways, and a 50% reduction on the boats to Greece.

Messrs. Manship and Faulkner are selecting marbles and obtaining estimates for the Thrasher-Ward Memorial. They are going to produce a fine monument.

Miss Alice W. Longfellow has given Mr. Lamond \$100 for the concert to be given at the time of our Spring Exhibition. Rev. H. W. de Nancrède has presented the Library with ninety-four books on various topics. Mrs. George B. McClellan is in town and interesting herself in the purchase of books for the Library. Mrs. William T. Jackson, a graduate of Boston College, reports that her college is to become a contributing institution for one year: she hopes that the contribution will become annual.

Mrs. William Caleb Loring of Boston died suddenly in Rome about two weeks ago. She was the wife of Judge Loring, the President of the Board of Trustees of the American School of Classical Studies at Athens, and the sister of Bishop Lawrence of Massachusetts. Mrs. Major Henry L. Higginson has been in town: she came to an important musicale given in the Villa Aurelia by the Department of Music, at which compositions by all three of our Fellows were given, and she made us two other visits. Mr. Anson Phelps Stokes and family are also here: I had the pleasure of taking them over the Studios, and they lunched with us one day together with Col. and Mrs. George B. McClellan.

There has been a Congress in Rome of the International Chamber of Commerce, and five or six of the delegates of the American Section, including their President, came to look at the Academy.

Boni has been made a Senator of the Kingdom of Italy. Yesterday (Saturday) afternoon we had an orgy of tennis. The Champion of Oxford University, the ex-champion of Italy, and one of the other ranking Italian players drove and smashed over our tennis court in the worst approved fashion.

From a letter written by Frank P. Fairbanks, Professor in Charge, School of Fine Arts, we quote the following:

Our first year painter and sculptor, Messrs. Floegel and Stevens, are making a tour of southern Italy and Egypt preparatory to a trip in Greece.

J. K. Smith, senior architect, has completed his ceiling study of the apse of S. M. del Popolo by Pinturicchio and has finished a very handsome rendering of the facade of the Palazzo Farnese. Smith will leave in a few days for America to be married and will later return with his wife to complete his Fellowship.

The work of the architects, painters, and sculptors in general has been a continuation of last month's activities.

Ciampaglia and Schwarz, our third and second year painters, visited, with Director Stevens and myself, the studio of Cav. Pietro Gentili, who is an authority on the manufacture and repair of tapestries. There we saw the work of tapestry-making in various stages, studied the methods of restoration and examined the various qualities of threads as well as being shown the methods of identification used by the manufacturers. On the way back to the Academy we made a visit to the house of Benvenuto Cellini, situated in a labyrinth of streets in Trastevere. The condition of the house is pathetic but the grafitto elaboration of its facade shows evidence of what was once a gem of rich elegance.

The Department of Music's principal activity was a concert at the Villa Aurelia, with a program consisting of the works of the Fellows in Composition, Sowerby, Hanson and Thompson. There was a distinguished gathering of nearly two hundred people, with many Italian composers and musicians present. The salon of the Aurelia, with its inspiring vistas of Rome, furnished an ideal atmosphere for the enjoyment of such a program.

Owner will sell, singly or in one lot, the following unused original editions: Price packed for express F. O. B. New York. Edfices de Rome Moderne, Letarouilly, bound, \$125.00; Zeiglebauwerke, Strack, \$35.00; Arte-Italiano, Vols. 1, 2, 4, 5, 8, 10, bound, \$100.00; Monograph, McKim, Mead and White, not bound, \$115.00; Details of Italian Buildings, Kmrof's, \$17.50; Renaissance Architecture in Lombardy, Paravicini, \$12.00; Brochure Series, complete bound, \$70.00; Odds and ends thrown in \$450.00. May be inspected in New York by appointment. Box 128, PENCIL POINTS.—Adv.

THE SPECIFICATION DESK

A Department for Specification Writers

SPECIFICATIONS FOR CRITICISM.

ACTING on the suggestion of one of our readers, Mr. M. N. Nirdlinger of Nirdlinger and Marlier, Pittsburgh, we have secured a set of architect's specifications for a brick and hollow-tile residence and we are printing this set of specifications in order that they may be criticised by our readers. Last month we printed the second installment and in this issue we continue. The object in doing this is to provide material for a discussion that will be helpful to all who have to do with the preparation of specifications by showing up the weak points in this set of specifications.

You are invited to join in and help rip up these specifications. We are withholding the name of the architect from whom we borrowed these specifications and he has entered into the spirit of the thing so you may feel at liberty to criticise them as severely as you like. We hope that you will also present many suggestions for improvement. The good resulting from this discussion will be in proportion to the number of men who join in with criticisms and suggestions, so we ask that you do not depend on the other fellow doing it but write us yourself, then the thing will be a success. Here is another portion of the specifications—let's have your criticism.

PLUMBING AND GAS FITTING

(Continued)

The main line from street and through cellar to be 2", with valves at front cellar wall. All pipe to be laid with a fall to the meter. All pipe used in said building to be Standard quality.

All center lights that run through ceiling to be run through block nailed between joists.

Where gas brackets occur, and there are no studding against same, this contractor will put in blocks making a stiff support. He will also figure on seeing that brackets and ceiling lights are accurately located.

All gas pipe to be hung where necessary with substantial pipe hangers of approved type. This contractor to include the running of ½" gas pipe out through rear wall of residence a distance of 5'-0" for garage connection, exact location to be as shown on survey.

PLUMBING:

NOTE:

All pavements, curbs or streets disturbed or damaged must be replaced.

Plumber will instruct general contractor where to leave all pockets, etc., in walls as he will have to do all the cutting should above be neglected.

The plumber shall do all the necessary digging for pipes and fill in again with earth well tamped in place. All excess earth from trenches to be thrown out of building. Great care must be taken not to undermine or weaken the walls. All pipe that run through walls, as well as all other cellar soil and drain pipes, to be put in before concrete footings and stone work is started.

Where soil pipes from rain conductors go down at corners, same must be carried along the outside of building at least 5'-0" before same comes through walls. The plumber will not be allowed to cut joists or walls without the consent of the architect. All rain conductor pipes must be in exact positions for rain conductors so no offsets will be necessary.

SOIL PIPES:

Furnish and put in place for closets in all bath rooms and toilet in cellar 4" cast iron soil pipes, which must be carried down to cellar bottom and out through building as shown on basement plans, where connect up to nearest sewer connection with 8" terra cotta sewer pipe.

Above pipes must have a fall of not less than ¼" per foot. Said work must have a perfect smooth joint inside.

All connections made to street sewer to be made under the direction of the City Engineer, and all plumbing work in the building to be according to the City Laws.

SEWER PIPES:

Sewer line properly trapped to be continued 5'-0" out from rear wall for garage.

All pipe to be carried on an even grade, so that every line will thoroughly drain. If necessary, grade must be obtained by Engineer's level, in which case plumber will pay for same. All pipe to be buried through cellar. From cellar toilet and second and third floor bath rooms 4" cast iron soil pipe shall be run up through roof as especially noted on attic plan. Pipes should not be carried through roof any greater height than required by the City. All vertical pipe to be concealed. Where soil pipes pass through roof a water tight joint must be made by providing flashings of 5-lb. sheet lead 18" square, with funnel around pipe.

All flashings to be well secured to roof in a neat and workmanlike manner. All soil pipe to be sound and strong and free from flaws and to be put up in a strong manner, with the necessary fittings. All soil and vents coming through roof are to be brought out at concealed locations.

WASTE AND VENT PIPES:

Waste pipes of all lavatories, bath tubs, and sink to be 1¼" seamless brass pipe, properly trapped and connected to soil pipe. All vents to be 1½" and 2" galvanized iron pipe, properly connected to the vents of all closets before passing out of roof. Vents of sink to run to roof separately. Place bell traps in cellar where shown, same to be flush with finished floor. Cast iron drum traps and cast iron bends to be used throughout.

REFRIGERATOR DRAIN:

Refrigerator to be drained in keeping with the City Laws and as shown on plans to have plain galvanized iron sink, which will have cold water supply and shall be provided with trap, etc., complete in all respects. Plumber will include galvanized refrigerator drain receptacle piping same to the sink above specified.

JOINTS:

All joints in cast iron pipes to be caulked with molten lead and oakum. All joints between cast iron and lead pipe must be made by means of proper brass soldering unions. Joints in lead pipe to be wiped and done in a neat and workmanlike manner. All joints in terra cotta pipe to be caulked with oakum and approved make Portland cement.

PACKING AND COVERING OF PIPES:

Plumbing contractor will figure on packing in space between studding where soil and supply pipes occur in first story partitions with mineral wool the object being to make the pipes noiseless. Plumbing contractor will also count on covering hot water pipes where they occur under tile floors with a strip of tin or with hair felt to allow for expansion. He will also pack pockets around pipes that occur in outside walls to prevent freezing.

FIXTURES:

CELLAR TOILET:

To be — — — Co.'s plate 4533 "P—" vitreous china closet bowl, No. 6 cast iron enameled closet tank fitted with —'s flush valve — ballcock N. P. brass supply pipes with "—" wheel handle angle compression stop, N. P. brass flush connection, and No. 4550½ golden oak open front seat and cover.

PENCIL POINTS

LAUNDRY TRAYS:

To be ——— Co.'s plate 4592 three (3) part set of enameled iron laundry trays arranged with $\frac{1}{2}$ " finished brass "R———" compression bibbs and soap dishes above the trays, $1\frac{1}{2}$ " rough brass three part continuous waste, and 2" rough brass plain "P" trap.

REFRIGERATOR DRIP SINK:

To be ——— Co.'s 12x16", plate 4586 enameled iron sink supported on brackets and arranged with cold water faucet only, and $1\frac{1}{2}$ " plain brass "P" trap with cleanout plug.

LAUNDRY STOVE WATER FAUCET:

Furnish and install approved make and pattern cold water faucet 4'-0" above floor directly over laundry range as noted on cellar plan.

KITCHEN SINK:

Kitchen sink, 20x36" size, to be as shown in ——— Manufacturing Co.'s catalogue plate P-6800-E with following changes—porcelain enameled one piece rolled rim sink supported on concealed wall hanger fitted with standard N. P. Q—— compression stream regulating combination double sink faucet with swinging spout and china lever handles, duplex strainer and $1\frac{1}{2}$ " No. 1 adjustable "P" trap. Sink furnished with underside painted white.

SECOND STORY BATH ROOMS:

BATH TUB:

Bath tub to be as shown in ——— Manufacturing Co.'s catalogue plate P-2387-L "W———" porcelain enameled all-over one piece bath for left hand corner with $4\frac{1}{2}$ " rim and left hand end outlet fitted with I——— top nozzle supply and waste, fitting through end wall. Size to be 5'-6".

LAVATORIES:

To be ——— Co.'s plate 4502, size 22x30" arranged with N. P. compression all china handle basin cocks, N. P. pop-up basin waste, $\frac{3}{8}$ " N. P. iron pipe size brass supply pipes, with "R———" N. P. wheel handle angle compression stops, and $1\frac{1}{4}$ " N. P. cast brass plain "P" trap with cleanout plug.

WATER CLOSETS:

To be ——— Co.'s plate 4527 vitreous china "C———" syphon jet closet bowl with No. 5 cast iron enameled closet tanks, fitted with Young's flush valve, M——— ballcock, N. P. iron pipe size brass supply pipe with "R———" wheel handle angle compression stop, N. P. flush connection, and No. 5 white Cellu-varno saddle seat and lid.

SHOWER:

To be as shown in ——— Co.'s catalogue, plate 4475 which calls for N. P. brass overhead needle shower head with straight arm and flange to wall, $\frac{1}{2}$ " concealed shut-off valves with forearm all china handles and china wall escutcheons. This contractor shall figure on the above faucets and arm for over-head shower at the left hand side of stall instead of at rear. He will also figure on a N. P. curtain rod, best quality duck curtain, curtain rings and hook and chain to hold curtain back, completing the above installation in all respects.

ATTIC BATH ROOM:

BATH TUB:

To be ——— Co.'s 4'-6", plate 4457, enameled iron bath tub, fitted with N. P. compression index bath cock, $\frac{3}{8}$ " N. P. iron pipe size brass supply pipes, and N. P. brass connected waste and overflow with chain and rubber plug.

LAVATORY:

To be ——— Co.'s plate 4512, size 18x21" enameled iron lavatory, fitted with No. 22 N. P. compression index basin cocks, $\frac{3}{8}$ " N. P. iron pipe size brass supply pipes with "Republic" N. P. wheel handle angle

compression stops, N. P. cast brass plain "P" trap with cleanout plug, chain and rubber plug.

WATER CLOSET:

To be ——— Co.'s plate 4533 "———" vitreous china closet bowl, No. 6 cast iron enamel closet tank, fitted with Young's flush valve, M——— ball cock, N. P. brass supply pipes with "R———" wheel handle angle compression stop, N. P. brass flush connection, and No. 50 birch mahogany seat and lid.

INSTANTANEOUS WATER HEATER:

Plumber will figure on installing complete in all respects a No. 4 R——, P—— or T—— instantaneous water heater.

HOSE OUTLETS:

Hose outlets to be provided where marked on drawings, counting on N. P. outlets with detachable key and plate against wall. Size to be standard with threaded end for hose connection.

SUPPLY PIPES:

Continue cold water lines out through rear wall a distance of 5'-0" for garage, include stops and drains at cellar wall and encase pipes in terra cotta sewer pipe.

Connect with the streets water main (allow distance as shown on survey) by means of a 1" ferrule and leading with a 1" caliber XX strong lead pipe to inside of basement wall, inserting in same, at curb line, roundway stop cock. Provide same with cast iron expansion box which shall be set level with curb. Inside of wall rise with aforesaid 1" lead pipe, flush with finished floor, and provide same with wiped joint and 1" brass nipple, brass valve on nipple, and make valve drip connection above same. Rise with 1" seamless brass pipe to ceiling of basement and lead full size to rear of house to a point opposite instantaneous water heater with a 1" branch to same; continue with $\frac{1}{2}$ " for branch to laundry trays and from this point $\frac{1}{2}$ " to sill cocks and $\frac{1}{2}$ " to cellar toilet.

The branch for laundry trays shall be $\frac{1}{2}$ "; the branch for cellar toilet shall be $\frac{1}{2}$ "; the branch for kitchen sink shall be $\frac{1}{2}$ "; the branch for second story bath rooms shall be $\frac{3}{4}$ "; the branch from second story bath room up to third floor bath room shall be $\frac{5}{8}$ ".

There shall be placed on each branch, where it leaves the main distributing line, full size approved type and make compression valves.

From the instantaneous water heater rise with a 1" distributing main to within 6" of cold water distributing main, and parallel same to all branches from same excepting sill cocks and collar toilet of same size as called for for cold water. Place compression valves similar to above specified on each branch and branch riser. In addition place a valve on the hot water line, where it leaves the boiler, with a $\frac{3}{8}$ " drain connection connected with drain from boiler.

All risers shall be run full size of branches to the respective group of fixtures except where pipes will be reduced from second floor to third floor bath room as above mentioned.

It is the intent of these specifications to provide for a noiseless installation so plumbing contractors will figure on installing their materials accordingly.

Bath rooms shall be supplied with proper size cleanout traps properly located, from which the various branches shall be lead to the fixtures of such sizes as required by the manufacturers of same.

All supply pipe shall be brass pipe iron pipe size as manufactured by the A——— T—— Company of Boston, Mass., or approved equal.

All supply pipe shall be arranged in neat groups and hung from ceiling of basement on strong and substantial expansion hangers, spaced not further than 6'-0" apart, arranging the whole system to drain toward the instantaneous water heater so that any time, if required, the entire system can be drained to the sewer without the use of vessels for bailing, etc.

Carpenter will furnish all boards for pipes.

Hose outlets as specified to be placed where marked on plans.

PENCIL POINTS

All cast iron sewer pipes for rain conductors to stop 6" above grade. Galvanized iron rain conductors will be cemented into cast iron sewer pipes in a neat manner by this contractor. All pipe to be of good lengths as no small leavings shall be used.

NOTE:

The plumbing work in the above building to be in strict accordance with the rules and regulations of the Plumbing Department of the City of _____.

Plumbing contractor will furnish and install water meter and will pay all costs for same.

ELECTRICAL WORK:

The building is to be wired for lamp outlets, switch outlets, receptacle outlets and meter outlet for a total of lamps shown on the drawings, and to include the installation of cut-out devices and switches. Contractors making bids for electrical wiring and appliances must familiarize themselves with other work in progress or contemplated in the building, so that the true spirit and intent of these specifications, of which said drawings are a part may be fully complied with. Contractors under these specifications shall begin work at proper stage of erection and proceed as rapidly as is consistent with good workmanship and not interfere or delay in any way the progress of the other contractors.

WIRES:

Wires throughout the building to be of an insulation approved by the Board of Fire Underwriters of _____ County, also the Electrical Department of the City of _____, for this class of construction and of carrying capacity for the delivery of current to the farthest light on any circuit with not over 2% drop between that point and source of supply.

INSULATION:

The general approved system of knob and tube work to be employed except at such points where outlets are located against brick or stone walls, where iron conduit and appropriate fixtures are to be established in conjunction therewith. The contractor will be careful to comply with all the new rules recently established.

(To Be Continued)

A CRITICISM OF SPECIFICATIONS

FROM Whitman Dart, Kansas City, Mo., we have received the following letter regarding the specifications offered for criticism:

Some of the following criticisms of the specifications published in the April PENCIL POINTS may be result of being only familiar with local conditions but as you will undoubtedly hear from all over this broad land, I take pleasure in trying to do my bit in the highly laudable work of improving the quality of building specifications.

Index should be in alphabetical order; when one is looking up something while on the job or at the telephone one is invariably in a hurry.

Find it advisable in case of a general specification, such as this seems to be (though not definitely so stated) to either list branches of work included, or else the work not included as "Hot Water Heating System, grading of ground, and etc., will be let under separate contracts." This should be at the beginning of the specifications.

The first requirement of Part 5 is one that every specification writer would be overjoyed to see fulfilled to the letter, but the writer's experience has been that contractors will take advantage of discrepancies every time they think they can get by, and he does not see how a general admonition to be honest is going to help any.

Most contractors keep a set of drawings and specifications on file at their permanent office and should do so, therefore the provision of Part 15 that "all" shall be kept on the job had better be "at least one complete set to be kept on the job."

As many contractors estimate all work themselves even though they intend to sub-let some of it later, the writer's experience is that it would be hard to enforce the clause in Part 16 regarding submitting a list of sub-contractors before the general contract is signed. This is particularly true of "rush jobs" and most commercial jobs are "rush."

We find that it facilitates work both in writing and in using specifications as well as making a more orderly and business like arrangement, to use heading and sub-headings, thus:

CONCRETE FOOTING AND RUBBLE STONE WORK:

Work included: Here specify where above kinds of work are to be used, etc.

FOOTINGS:

STONE:

MORTAR:

WORKMANSHIP:

ETC.:

The way the above specification under discussion is written one must read through six paragraphs to find any one of the above dozen items. Also there is a fine chance of omitting something when writing the specification as it cannot be reviewed quickly and specifications are written in a rush 90 per cent of the time.

It is our practice to leave general dimensions, such as depth of basement, thickness of walls, etc., to the drawings. The drawings cannot be made properly without showing these things, so why repeat.

The mortar specification (which ought to be a sub-heading under Rubble Stone Work) is indefinite as to proportions of the mixture. In this locality there would be an argument right at the start at to what constitutes "rich proportions."

There is no provision for submitting shop and setting drawings, models, etc. These are always required here for a number of branches of work, among which is Cut Stone.

While the above may seem like a long list of knocks there are many clauses, particularly in the general conditions, which appeal very favorably to the writer.

GOOD ENGLISH IMPORTANT IN SPECIFICATION WRITING

WE HAVE received the following letter from William G. Bell, Maintenance and Repair Sub-division, U. S. Veterans' Bureau, Washington, D. C.

I have read with interest your recent articles on specification writing, and am availing myself of the invitation in the previous and current issues to criticise the specification printed therein, and to discuss the question of specification writing in general from my experience in this occupation.

It seems inexplicable to me that there are so few specification writers who can write correct English. I have known engineers and architects who could dictate a perfectly clear and well written letter, but who, when writing a specification, used interjections, disconnected phrases and incomplete clauses in lieu of complete sentences.

The specification offered for criticism is a product of this kind. It would appear that you have selected a bad specification with deliberate intent, in order to offer plenty of opportunity for criticism.

If such a specification should appear as an exhibit in a law suit, a skillful lawyer could twist the wording to mean anything desired. I have known of cases where contractors were able to get away with things that were contrary to the true intent and meaning of the plans and specifications because the specifications were written in such poor English that the architect dared not enforce his interpretation.

No one should write specifications unless he has an elementary knowledge of the English language, and there is no excuse (except laziness) for any reasonably educated person turning out any such English as this. Has the writer never heard of, or has he forgotten the proper usage of "shall" and "will"?) Does he not know that the participle "to be" cannot be used as a predicate without a verb?

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The "General Condition" clauses seem to indicate that the writer does not have very much confidence in the correctness of his plans and specifications, considering the emphasis he places in the clauses bearing on the *intention* of the plans and specifications agreeing.

Why not list the drawings by their titles, and why mention what is figured on them?

Under "Excavation," there is much information that should appear on the drawings.

Why the side heading "Note" under "Concrete Footings and Rubble Stone Work?" Why not state in the side headings the subject matter of the paragraph that follows? Why mention brands of Portland cement? Is the writer unaware of the existence of the American Society for Testing Materials, and its standard specifications and tests?

Why is the thickness of the concrete floor in the cellar specified under "Excavation?" The drawing should show the thickness, and the specifications should describe the mix of concrete, method of laying, finish, etc. All these things should be specified under "Concrete Work" rather than "Excavation."

Under "Brick and Hollow Tile Work" should first be a clause "Scope of the Work," followed by paragraphs covering "Common Brick," "Face Brick," and "Hollow Tile."

Under "Face Brick Work" there is a clause which would indicate that the specification writer does not know the building laws of his city—a shameful confession to make.

The paragraphs on steel and iron work show the same poor arrangement and lack of thoroughness that appears throughout the specification.

There should be a heading entitled "Roofing and Sheet Metal Work," commencing with a clause entitled "Scope of the work," followed by the heading "Tin Work," "Copper Work," "Galvanized Iron Work," "Slate Work," etc. The gauge of metal of the galvanized iron gutters should be specified.

I have been writing specifications for the last fifteen years in large government and private architectural and engineering organizations, with varied systems of office organizations.

I have been required, in 90 per cent of the cases, to write the specifications simultaneously with the preparation of drawings.

In such cases, I take the preliminary drawings, go through them, make up a questionnaire listing all the points requiring to be mention in the specifications and give this to the "squad boss." The squad boss is made responsible for seeing that all dimensions, and the location of the different kinds of materials and finishes are indicated on the drawings. I then confine myself as nearly as possible to the description of the workmanship and materials, and the classification and arrangement of the specifications so that it is perfectly clear as to which contractor is to do the different kinds of work.

In order to produce good specifications, it is necessary to have not only a good specification writer, but a good squad leader as well, and good team work between the two.

SHALL AND WILL

FROM Virgil L. Johnson, Philadelphia, Pa., we have received the following letter regarding the specifications offered for criticism in these pages:

In reading your specification published in the May issue of "PENCIL POINTS," which you offer for criticism, it would seem that there has been a failure to discriminate in the use of the words "shall" and "will." This is a common error in the use of the English language by Americans, due largely to the fact that in grammar school the pupil is first taught to recite "I shall or will love," etc., thus giving the impression that both words have the same value.

There is, however, considerable difference in the use of the words shall and will. The latter should never be used by the speaker in giving a command in the second or third person.

The best example or illustration is given in the Ten Commandments. If we take pains to study the twentieth chapter of Exodus we will notice the strength expressed in

the word "shall." Then if we change the wording introducing the word "will" in place of "shall" we notice at once its weakness.

The specification is a part of a contract and is a written statement from the architect commanding the contractor to do certain work in the execution of his part of the contract. Therefore, the architect can do nothing better than express himself in the strongest kind of English.

In re-writing this specification whenever a command is expressed, I would change "will" to "shall" and such words as "must be," "to be," "are" to the stronger expression of "shall be."

PARAGRAPHING SPECIFICATIONS

WE HAVE received the following constructive criticism from Benedict Farrar, of the firm of Study & Farrar, architects, St. Louis, Mo.:

As you have invited suggestions, and criticism, of the specifications which you have been publishing recently in "PENCIL POINTS," we are writing to express an idea which occurs to us in reading over our April and May numbers.

We feel that the context of your published specification is good, but that for practical purposes the arrangement and paragraphing might well be improved upon. Our conception of a specification is that it should bring before the bidders first, and the contractors second, the intention of the architects in the simplest and quickest manner. Nothing is gained in the long run by making the specification vague and by requiring an estimator and the foreman to hunt through a lot of items in which he is not immediately concerned, to find the particular clause which is applicable to the case in point. It has been our experience that the best method of arranging the different items which go to make up the complete specification, is to group them under main headings; each main heading to include all the work which is to be figured and executed by a particular trade or contractor. Thus:

IRON WORK

I BEAMS:

*
— — — —
— — — —

ANGLES:

— — — —
— — — —

WROTE IRON GRATINGS:

— — — —
— — — —

etc.

BRICK WORK

KIND OF BRICK:

Face —————
Backing —————
Fireplace —————

MORTAR:

— — — —
— — — —

etc.

If the above method is followed, and the specification carefully indexed, there will be no occasion for a Stone Mason to read through any paragraphs referring to brick work, or a Sheet Metal Man to hunt through the Iron Specification to find anything that is under his contract.

We have found it also to be a very good plan to place as many figures as possible in the specification rather than among the plans, such as door sizes, sizes and thickness of wood casings, sizes and thicknesses of flooring, size of tiling etc. Such figures are usually easier to read from specifications than from plans, and this leaves just that much more space for the information which cannot be conveyed in any other way than by drawings.

We trust the above suggestions will be of some value to the readers of "PENCIL POINTS," and that you may continue the publication of the "Specification Desk" with letters of criticism, both of which are of considerable value to a specification writer.

PENCIL POINTS

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Crittall Universal Casements.—Catalog No. 22 in Sepia, illustrating and describing completely, full line of casement windows. Many full page plates, sectional drawings, details, etc. A valuable addition to any architect's working library. Crittall Casement Window Company, Detroit, Mich.

The Heart of the Home.—Booklet containing complete information on ranges and other equipment required in the modern kitchen. 31 pp. 6 x 9. Bramhall, Deane Co., 261 West 36th Street, New York.

Ornamental Brass and Bronze Work.—Catalog illustrating wide variety of brass and bronze work for buildings of all kinds, entrance doors, mausoleum doors, bank fixtures, tablets, marquises, letters, lanterns, railings, etc. 80 pp. 9 x 12. Penn Brass and Bronze Works, 105-107 Dobbin Street, Brooklyn, N. Y.

Heat Insulation.—A very informative, 24 page, booklet upon the use of "Quilt" for insulation, profusely illustrated, and containing detail drawing for use in the various types of building construction, has been recently published and will be furnished to anyone addressing Samuel Cabot, Inc., 141 Milk Street, Boston, Mass.

Insulated Wire & Cable Handbook.—Technical treatise covering all phases of the subject. Complete data for specifications. 102 pp. 6 x 9. Handsomely bound in cloth. Okonite Company, 501 Fifth Ave., New York.

Modern School Lighting.—Illustrated booklet with tables covering subject. Useful diagrams and other specification data. 36 pp. 6 x 9. The Holophane Glass Co., 342 Madison Ave., New York.

(Scientific Industrial Illumination, a companion volume of 48 pp. is published by the same firm.)

Hastings Handbook of Window Screens.—Attractive booklet with many diagrams designed especially for architects and draftsmen. 16 pp. 8½ x 11. Rolup Screen Company, 410 East 32nd St., New York.

Panic Exit Locks.—Catalog No. 20, covering gravity and mortise types of exit locks for schools, theatres and all other buildings requiring such equipment. Sectional drawings showing operation. 32 pp. 8½ x 11. Frank F. Smith Hardware Co., 87 Clay St., Newark, N. J.

The Banking House in Art Metal.—Attractive illustrated brochure covering subject indicated. Many full page illustrations of banking interiors properly equipped. 70 pp. 8½ x 11. Art Metal Construction Co., Jamestown, N. Y.

Brick, How to Build and Estimate.—Illustrated booklet standard A. I. A. classification with diagrams, sectional drawings and much useful data on brick work. 72 pp. 8½ x 11. The Common Brick Mfrs. Assn., 212 Discount Bldg., Cleveland Ohio.

Loose-Leaf Plates on Lighting.—A series of carefully worked out drawings on subject of lighting various types of rooms and buildings. Everything from the office to the residence is considered. Floor plans, layouts, all carefully worked out in relation to furnishings. Ask for portfolio of lighting fixtures. National X-Ray Reflector Co., 23 W. Jackson Blvd., Chicago, Ill.

Donley Devices.—Handy booklet describing fireplace dampers, garbage receivers, ash dumps, coal chutes, garbage burners, etc. Valuable information for the specification writer. 32 pp. 4 x 9. Donley Brothers, Co., Cleveland, Ohio.

Portfolio of Waterproofing Information.—Portfolio of loose leaf data for architects and draftsmen containing much useful information on the subject. A. C. Horn Co., 900 Horn Bldg., L. I. City, N. Y.

Elevator Door Hangers.—Portfolio of plates covering ball-bearing door hangers of various types. Also booklet on garage door hardware. Wagner Mfg. Co., Cedar Falls, Iowa.

Natural Slate for Blackboards.—Booklet with sectional drawings showing details of blackboard installation. 16 pp. 6 x 9. Natural Slate Blackboard Co., Pen Argyl, Pa.

Connersville Vacuum Cleaners.—Booklet describing stationary and portable types, showing installations. 6 x 9. 24 pp. Landers, Frary & Clark, Connersville, Ind.

Hoffman Gas-Fired Water Heaters.—Book for architects containing technical and general data on subject of modern water heating. Many blueprints, tables, layouts, etc., 56 pp. 8½ x 11. Standard filing size with portfolio for additional data on the subject. The Hoffman Heater Company, Lorain, Ohio.

Pullman Unit Sash Balances.—Catalog No. 33. Covers subject of sash balances to be used in place of window weights. Large blueprint showing construction and methods of installation. 16 pp. 8½ x 11. Pullman Mfg. Co., Rochester, N. Y.

Beautiful Birch.—Illustrated booklet in Sepia showing uses of birch for interior woodwork. Many full page plates. 36 pp. 6 x 9. Northern Hemlock & Hardwood Mfrs. Assn., Oshkosk, Wis.

Trane Bulletins.—Folder of condensed technical data on the mechanical equipment of buildings. Should be in every specification writer's files. The Trane Co., La Crosse, Wis.

Kitchen Maid Unit System.—Bulletin with large working drawings on subject of kitchen cabinets. Standard filing size. 8½ x 11. 16 pp. Wasmuth-Endicott Co., Andrews, Ind.

Hollow Metal Windows.—Details and specification. Loose-leaf folder containing data on the subject. Sectional drawings. 8½ x 11. The Lawton-Stephens Co., Inc., 427 Marcy Ave., Brooklyn, N. Y.

The Essentials of Building Construction for Homes.—Illustrated booklet covering applications of metal lath to home building. 16 pp. 7 x 10. Associated Metal Lath Mfrs., 72 W. Adams St., Chicago, Ill.

(The Correct Application of Metal Lath to Avoid Plaster Cracks, a technical treatise on the subject, is published by the same Association.)

Mahogany in Colonial Days.—Attractive folder showing many old Colonial types. Also the "Home Beautiful," "Chippendale and Mahogany," and "Sheraton and Mahogany." The Mahogany Association, Inc., 1133 Broadway, New York.

Blue Printing Machinery and Accessories.—Catalog M-25. Covers every phase of blue print making and equipment for accomplishing the best results. Invaluable in every large drafting room. 64 pp. 6 x 9. The C. F. Pease Co., 803 No. Franklin St., Chicago, Ill.

The Evanston Sound-Proof Door.—Bulletin with drawings and specification data showing construction and operation, lists of installations, etc. 8½ x 11. 16 pp. Irving Hamlin, 716 University Place, Evanston, Ill.

Rotary Ash Receivers.—Descriptive folder with diagrams and other specification data. Sharp Rotary Ash Receiver Corp., Springfield, Mass.

Celotex Specifications.—Specifications, samples and drawings showing application of Celotex insulating lumber. Loose-leaf, 48 pp. The Celotex Co., Conway Bldg., Chicago, Ill.

Once Used Water.—Booklet on the subject of washing and bathing in running water. Illustrated. Shower fixtures, specialties, etc. are listed and described. 16 pp. Speakman Co., Wilmington, Dela.

Linoleum Specifications.—Standard specification for Battleship Linoleum over concrete. A. I. A. standard file No. 2811. Covers subject indicated. Bonded Floors Co., 35 West 45th St., New York.

Berloy Building Materials.—Handbook for architects, draftsmen and specification writers, covering all types of metal lumber for a wide variety of uses. Covers floor construction and many other matters of particular importance. 400 pp. handy pocket size. Bound in library buckram. Berger Mfg. Co., Canton, Ohio.

Things You Ought to Know About Casement Windows.—Brochure illustrated with attractive drawings and photographs showing the application of casement windows in various types of houses and rooms. Details of Construction, etc., 24 pp. 6 x 9. Casement Hardware Co., 235 Pelouze Bldg., Chicago, Ill.

(Also published by the same company Catalog No. 9, 12 pp. 8½ x 11, containing complete specification data for casement window devices.)

Doors for Industrial Buildings.—Catalog No. 36. Attractive brochure done in sepia showing rolling steel and wood doors, horizontal folding doors, fireproof air chamber doors for various industrial uses. Details of construction and specification data. 16 pp. 8½ x 11. J. G. Wilson Corp., 4 East 36th St., New York City.

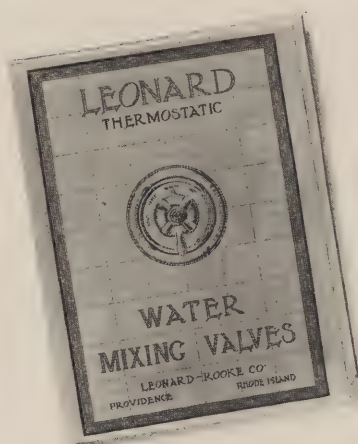
Duriron Acid-Proof Drain Pipe.—A hand book for architects and engineers covering layouts for laboratories and other conditions involving the problem of pipe corrosion. Much valuable technical data. Many sectional drawings, tables, specification material, etc. 20 pp. 8½ x 11. The Duriron Co., Dayton, Ohio.

Atlanta Terra Cotta.—Monthly brochure for architects and draftsmen. The May number illustrates the Cathedral Chivasso and Santa Maria del Grazie, Milan. 8 full page plates, photographs and measured drawings, and one color plate from pastel sketch by H. V. K. Henderson. Atlanta Terra Cotta Co., 350 Madison Ave., New York.

Specifications and Architects' Report.—4 page leaflet describing the O. K. Clothes Dryer with complete specification data and report of a committee of architects which has carefully examined details of construction and quality of materials and workmanship. O. K. Clothes Dryer Co., 471 West 145th St., New York.

Sedgwick Out-door Dumbwaiter.—Illustrated booklet with diagrams covering this useful but little known type of vertical conveyor. Sedgwick Machine Works, 158 West 15th St., New York.

Wall and Ceiling Handbook.—A treatise on interior walls and ceilings—decoration and preservation. Illustrated booklet covering walls and ceilings in home construction including decorative treatments. 16 pp. 5½ x 7½ in. Bostwick Steel Lath Co., Niles, Ohio.



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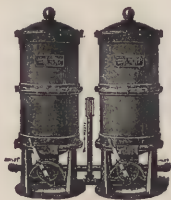
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A CRITICISM OF SPECIFICATIONS

FROM a Brooklyn reader we have received the following letter.

Having been for more than a quarter century in position to observe the annoying features of the typical specification, I am glad if I can drop a hint which will induce some ambitious young architect who can forego the sentiment for ancient traditions and show some progress toward keeping architecture going forward in the direction with other arts and sciences.

The most exasperating characteristic is indefiniteness. The sample spec. is not so bad as the average but contains many of the usual meaningless phrases such as: "as directed, approved fastening, approved type of ash chute, brick of such make and color as selected by architect and owner," etc. The first thing for the contractor to do is to commence trying to guess what the architect and owner's taste is, and cart samples to them till he strikes their fancy. It would seem that they could make up their minds before writing the spec. as easily as while the work is held up for their decision, then specify "equal to S. & F. No.?" Then we commence carting ash chute doors, fasteners, locking devices, etc., for "approval." "Set nailing blocks as necessary." Who furnishes? Should be prohibited. Under "FIREPLACES AND FLUES," we read: "Chimneys above roofs will be built with face brick similar to outside walls, of designs shown," and under: "FACE BRICK WORK;"—"Chimneys above roofs to be laid up of above face brick and of designs shown."... It is clear that all this is, or should be, indicated on the drawing, which has to be referred to for the design and dimensions. Why repeat it all twice in the spec? The foregoing are only examples, we will not take the time to show others, but pick up a few typical points briefly.

"No light colored brick will be allowed in the building." Why so? Mortar for face brick is described. What about mortar for common brick? Cement is costly, this is of importance.—1-inch nails are required for nailing tin to 7/8-inch boards. What size nails for slates? Paper under slates to be "well nailed." What does he consider "well nailed?" It would seem to a practical man just enough to hold in place till the slates are on. "Paper to be 'well lapped.'" What is "well lapped." Would it not have been as easy to say inches? "All risers to be 3/4" pipe all branches to be 3/8" pipe." How about main runners? 3/4" is equal to three 3/8" in capacity. 1/2" will supply any single or double burner. Why 3/8"? 1/4" is commonly used. It is nearly 3/8" in actual inside diameter. "All pipes to be perfectly tight." How important to specify this. Mortar for face brick to be tempered with cement "counting on one sack to 1 cu. yd. shall be tempered as it is used on the scaffold." Will this be done? Everybody knows it, but is not once in a specification sufficient to say "according to drawings?"

15-lb. paper is required. Where can this be had? 14-lb. is as good. There is scarcely anything in these, nearly two pages, which is not or should not be in the drawings or left out altogether. Yet, this is above the average specification.

EXPOSITION AT ATLANTIC CITY

AN EXPOSITION is to be held on Young's Million Dollar Pier at Atlantic City, N. J., from June 16 to September 8, under the auspices of the American Home and City Beautiful Association. The Exposition will be under the direction of Conrad Ekholm.

The entire exhibit floor space of the Million Dollar Pier, more than 100,000 square feet, has been taken for the exposition which will embrace exhibits pertaining to public as well as private buildings, city planning and improvement, home building, furnishing and equipment, landscape gardening and many other matters directly bearing upon the work of making American homes and cities beautiful, and healthful. The plans for the exhibition call for the construction on the pier of two fully equipped houses and for an especially comprehensive exhibition of equipment for the modern home.

OFFICERS RE-ELECTED

AT THE Annual Meeting of the Pennsylvania State Association of the American Institute of Architects held in Harrisburg, May second, the following officers were re-elected for the ensuing year:

W. L. Plack, President, Philadelphia; Sidney F. Heckert, Vice-President, Pittsburgh; G. Wesley Stickle, Treasurer, Erie; Percy Ash, Secretary, Philadelphia.

THE MAKING OF AN ARCHITECT

THOUGH it is true, in a sense, that architects are born, not made, it is equally true that even the best material requires a great deal of development.

Perhaps the most important fact to be grasped is that architecture is *not* something merely to be *learned*. In the opening sentence on this page the emphasis has been placed advisedly upon development.

There is a threefold purpose in any thoroughly good course of architectural training. Naming the least important purpose first and the most important last, we may make the following division. One purpose is the acquisition of the knowledge that is a necessary tool for the architect. Another purpose is the formation of a habit of proper procedure in attacking problems in architectural design. The third purpose is the development of appreciation and of the power to create in terms of architecture. One should *know* architecture, but to *be* an architect means this and a great deal more.

Whether one gains the knowledge, the habit and the development entirely in office work or through school work, supplemented by office experience is immaterial, though, excepting in rare cases, the conditions for proper training are not found in office work alone. Actual contact with good, old buildings in this country and abroad is very valuable and travel has a broadening effect. A travelling scholarship is well worth working for.

The courses offered by the recognized architectural schools and by the ateliers are open to practically everyone and are designed to accomplish the threefold purpose described above. The program of the Beaux-Arts Institute of Design, which is incorporated in most of the courses in architecture and followed in the ateliers, is planned to train the student in all these ways.

As supplementary training, each student ought to secure for himself in his free time as great a development as possible of his sensibilities and of his power to think clearly. Attendance at the opera and at concerts and visits to picture galleries in the season make him more sensitive to beauty and more receptive of the messages embodied in art forms. In the summer, tramping and sketching in the country, among the hills and in the forests; opening himself to an appreciation of the beauty of nature and to a comprehension of the inevitable sequence of cause and effect in nature's workings will give him invaluable development and will help him to maintain the splendid state of physical health that

is a prerequisite to really effective study or work. In this connection it seems well to call attention to a bit of sound advice Mr. Harbeson gave in his article in the June issue of this journal, when he pointed out the necessity for keeping one's vitality at the highest level and the folly of habitually allowing things that should have been done at the proper time to rob one of the necessary hours of sleep—of the folly of unnecessary charretting.

We have spoken of the opera and the picture galleries, but the musical comedy and the ball game have their proper place in the scheme—as has everything else that tends to normality.

Among the essentials of an architect's equipment is a grasp of the relation of the arts,—more especially of architecture, to human life. Part of this he will get from a study of history in connection with a study of the architecture of the past, part of it, the modern part, he will get from current literature and from everyday contact with people.

Architecture more than any other art has traditions, and they are invaluable as points of departure and as safeguards. The intelligent study of architectural documents, books of plates of measured drawings of the best old work, particularly such books as d'Espouy's "*Fragments d'Architecture Antique*," "*Architecture Toscane*," by Grandjean de Montigny et A. Famin, and other books of recognized authority is invaluable. For this reason the publishers of PENCIL POINTS are beginning the publication of a series of reprints of old books and of selected plates from some works, under the title "The Library of Architectural Documents."

Architecture has to solve practical problems and to find its expression by means of construction in a great variety of materials. The matter of practical requirements is one of the greatest importance. An architect must know how a particular family lives in order to design a house for that family, whether they eat breakfast in their rooms, and even more intimate details of family life and of personal taste. These inquiries need to be made with tact and judgment. Watch people, learn their mode of life, see how they act in the railroad stations, restaurants, stores, and plan these buildings accordingly. A mastery of construction is necessary, the man who hasn't a grasp of it is handicapped in designing and is not an architect. The ability to write good specifications is essential.

The many sided nature of architecture makes it at once the most difficult and the most fascinating of the fine arts.

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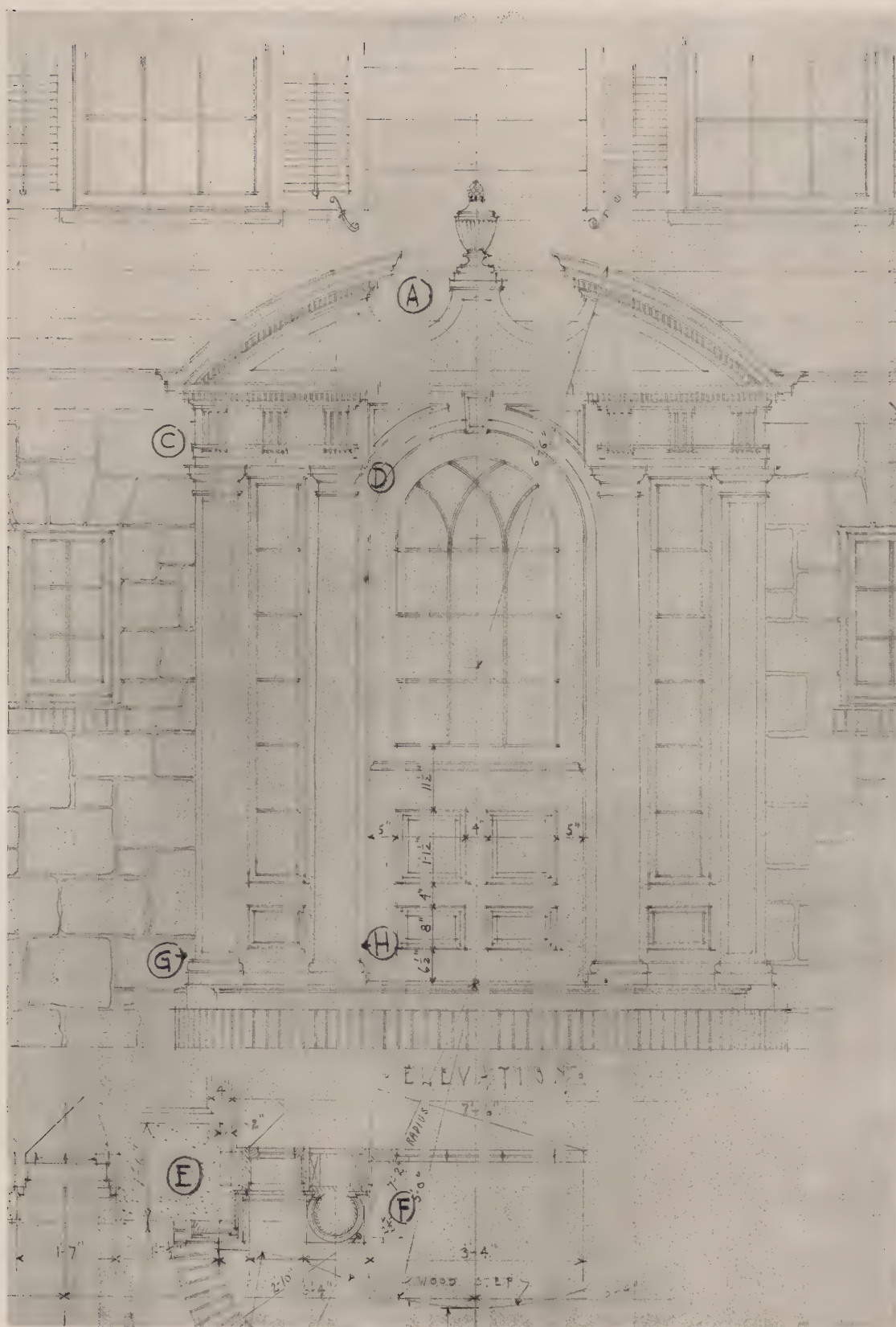


Figure 1. Detail of Main Entrance Door. House at Cold Spring, N. Y., for Henry W. Healy. Everett V. Meeks, Architect.

THE MAKING OF WORKING DRAWINGS

PART III, FULL SIZE DETAILS

BY JOHN C. BREIBY

This is the third of a series of articles in which Mr. Breiby of the staff of Carrère & Hastings is giving much practical information on drafting room work. The first article covered the preparation of general drawings, the one-quarter or one-eighth inch scale drawings. The second article covered the making of three-quarter and other scale details. Architectural models, shop drawings, etc., will be treated and at the conclusion Mr. Breiby will take up the preparation of sketches, etc., particularly sketches of interest to the drafting room.—Ed.

AS ALL working drawings and specifications of architectural work are instruments of service for use during the actual construction, full size details may perhaps be called "temporary instruments" of service. The general working drawings, specification and scale drawings are always sacredly filed and guarded after the completion of the work, to serve as permanent records of executed work, and very often become active again, should any addition or alteration to the executed work be required.

Full size details are not so sacredly treated, for although they may be kept for some time after their service is over, they are usually too large to permit permanent economical filing. Often the method of construction or use of a particular material, which was the very latest at the time the detail was made, may have become entirely out of use, with the progress of science, in a short time. Should later information be required of work executed from a particular drawing, this can best be obtained from actual conditions at the completed building. Therefore, detail drawings should be made as simply and as economically as possible; but making details simply and economically, does not mean neglecting careful study.

Full size details are made for the purpose of explaining how the architect wants particular parts of the work executed, whether this is for ornamental parts or to show purely practical conditions.

As all architectural drawings can be divided into two distinct groups—those for the interpretation of design and those for the interpretation of practical portions—full size details must then also be classified in the same way, with perhaps this modification, that all full size details must show the practical way of execution no matter how elaborate they are required to be for the interpretation of design ornament.

From the making of the most simple drawings, such as details of windows, plain stone sills, etc., to the preparation of the most elaborate ornamental drawings, no phase of architectural drafting offers better opportunity for study and development in draftsmanship than the study and making of full size details. The younger men will more rapidly learn the technique of using the pencil in a free and bold way and will also acquire the knowledge of materials and the assembling thereof by constructing the work—true it is only on paper, but it should be no less real. The work expressed by

drawings should, in the mind, take the shape of materials to be used and fitted into their required places in the completed building. The experienced draftsman will work in this way.

Details interpreting design, such as for carving of wood or stone, ornamental iron work, etc., are not drawings for the study of architectural ensemble or design. It is quite as impossible to study general mass and proportion on full size details as it would be to study the human figure by analyzing the hand only. Detailing is the very work of analyzing each part by itself, but the relation the detail bears to the complete composition must always be considered. The study and development of refinement or boldness in mouldings, ornament and relationship of one moulding to another can only properly be accomplished in the making of full size details.

Practical details, such as drawings showing the proper way to construct window frames, cupboards, curbing and ventilating devices for skylights and so very many other problems to be solved, are all studied and developed with a view of economy in execution or to utility.

The expression, "the drawing fairly sparkles," may well apply to a good detail whether it be a drawing of ornament or of some purely practical point.

Since as was mentioned before all full size details must show the practical way of execution, it will not be necessary to differentiate between ornamental and practical drawings in the following sketch outline of procedure in their preparation and use.

The making of full size details follows the making of the general and the large-scale drawings which have been considered in previous issues of PENCIL POINTS. By the time details are required, contracts for the execution of the work have usually been let. Such drawings are rarely prepared for estimating purposes. It must always be remembered that full size details must be governed by conditions which have been established on the general set of contract drawings and specifications, so any elaboration beyond that which is called for by the contract document drawings will always raise questions of extra costs between the architect and contractor.

Full size details are really enlargements made from the smaller scale drawings and upon such enlargements absolute detail information can be shown, for instance, how a cornice should be built up, or the accurate cutting shapes of mouldings,

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forms of ornament, etc. Study carefully the general and larger scale drawings and specifications to determine what portions are required to be detailed. Make a list of the drawings required. In fact a list covering all drawings to be made for the entire work, including general drawings, etc., is very good practice.

In order to arrange the detail sheets in the most practical way and of convenient size to include as many parts of the work as are required to be shown, it is well to make a small diagram on tracing paper at the same scale as the drawing to be detailed. Figures 1 and 1-A illustrate this method; Figure 1 shows a $\frac{3}{4}$ -in. scale detail of an exterior door treatment, parts requiring full size details being indicated by letters A, B, C, etc.; Figure 1-A shows a sketch of the sheet required and a general arrangement of details traced from drawing 1. Note that additional parts are shown on Figure 1-A, as indicated by letters B, I, J, which are not shown on Figure 1, indicating sections, side views, etc., necessary to complete the full size detail, but not necessarily required to be shown on scale detail. From the example given above, it will be seen that more than one sheet of details will be required to complete the work indicated on Figure 1.

It is well to remember that the maximum width of blue prints obtainable, is 54 inches,

but that they may be of any required length.

Many offices use standard size sheets for all drawings; that is, one size for all general small scale drawings, another for the larger scale drawings, and still another for full size details, and some offices have developed a standard method whereby drawing sheet sizes are established by a given unit size,

based upon a standard size sheet required by the general $\frac{1}{8}$ -in. or $\frac{1}{4}$ -in. scale working drawings, the larger scale and full size details then being multiples of the unit size sheet.

Any suggestions for arranging detail sheets or the use of standard size drawings must not be taken for fixed rules or better practice. It is of utmost importance, however, to know what to show and how to show it, which careful study and experience alone can teach.

These are the days of specialists; each particular part of the work is executed by men trained to perform that one part exceedingly well. Such specialists are generally known as sub-contractors, engaged by and under a general contractor who acts as head and is responsible for the entire work to the architect, or each specialist may have a direct contract to execute his particular portion of the work directly under the supervision of the architect. Whatever may be the arrangement of contract or contracts, the architect is the "master builder," for he

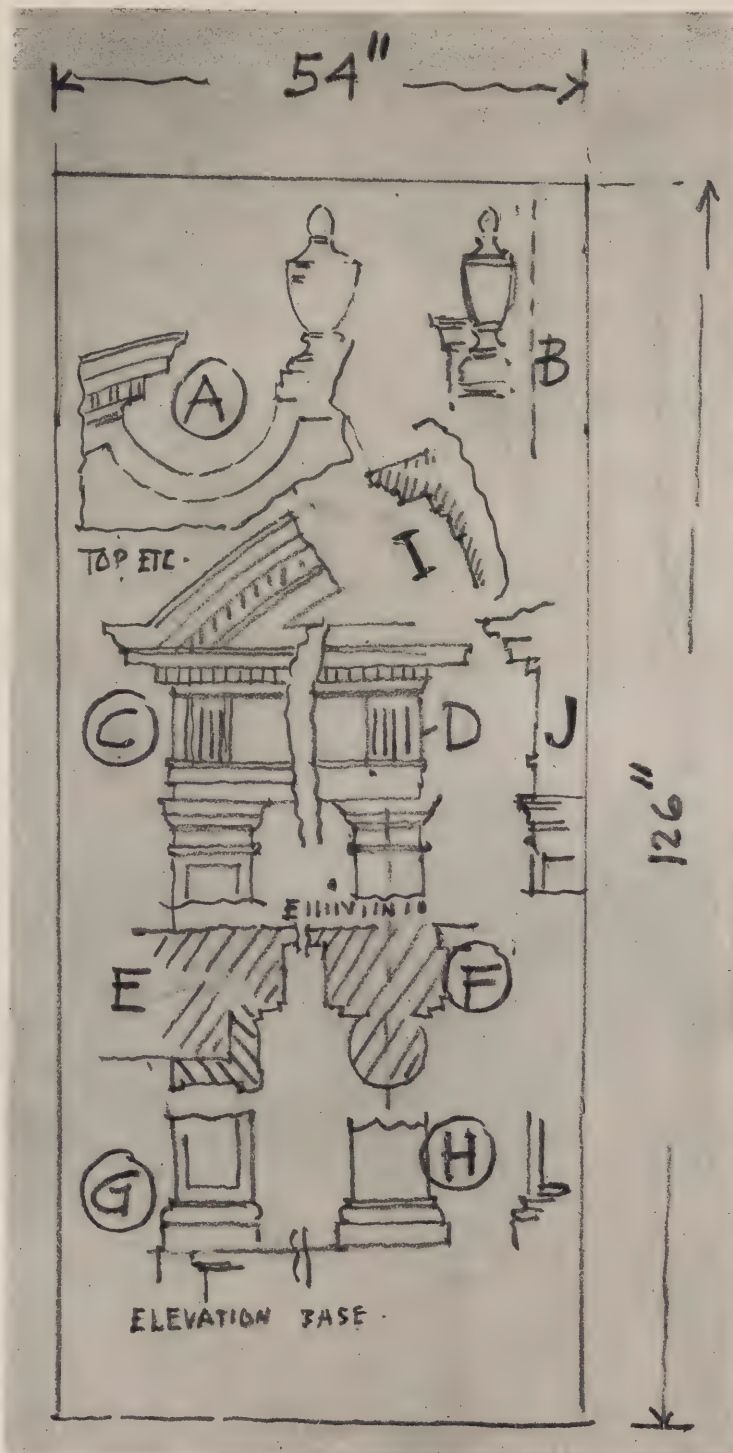


Figure 1-A. Small Diagram Showing Arrangement of Full Size Details on Large Sheet

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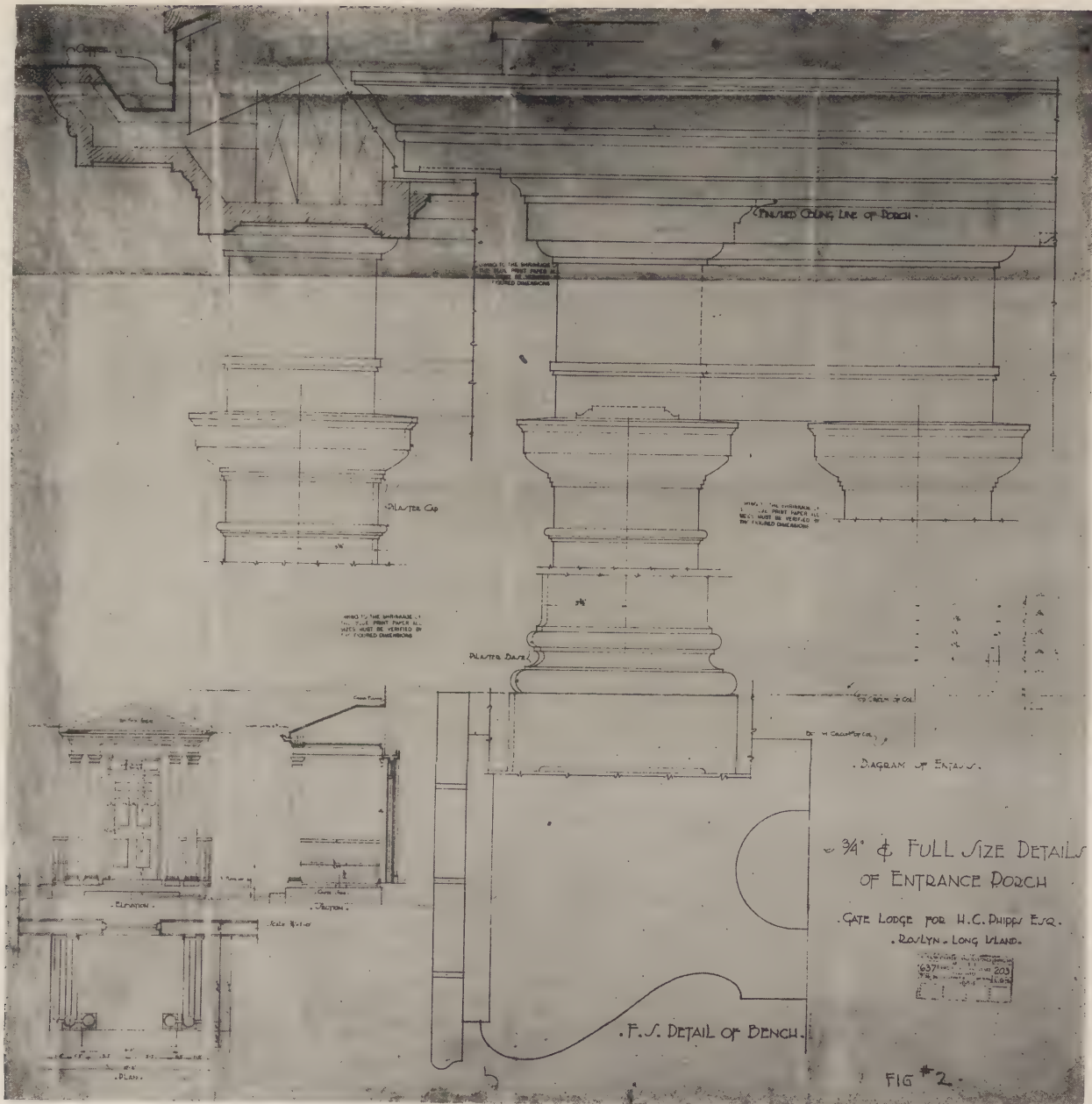


Figure 2. Full Size Details of Entrance Porch. Gate Lodge for H. C. Phipps, at Roslyn, L. I. Carrère & Hastings and Shreve, Lamb & Blake, Architects.

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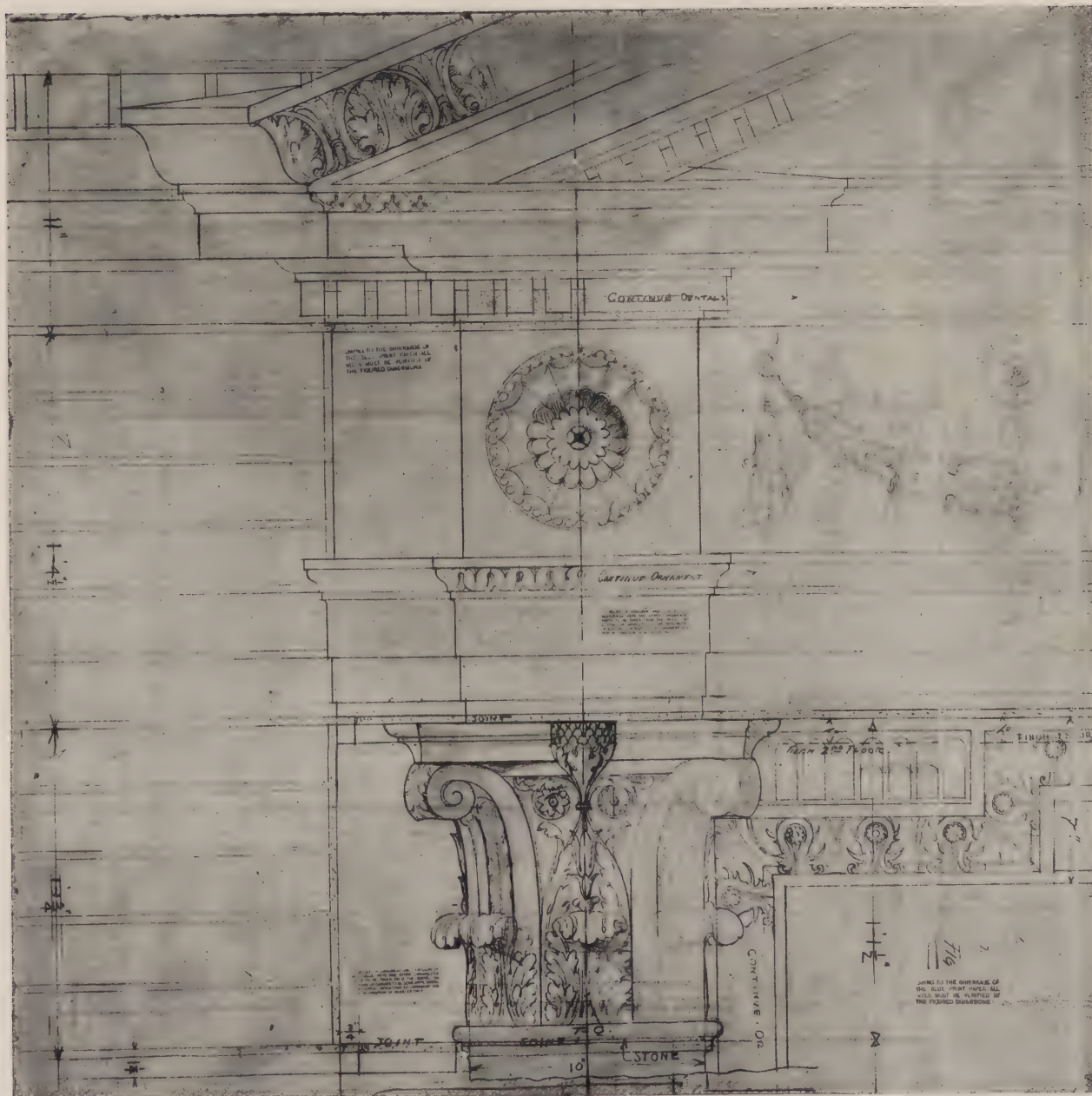


Figure 3. Part of a Full Size Detail for Stone Entrance Door Treatment, Apartment House for 46 West Ninety-fifth Street, Inc., New York City. Carrère & Hastings and Shreve, Lamb & Blake, Architects.

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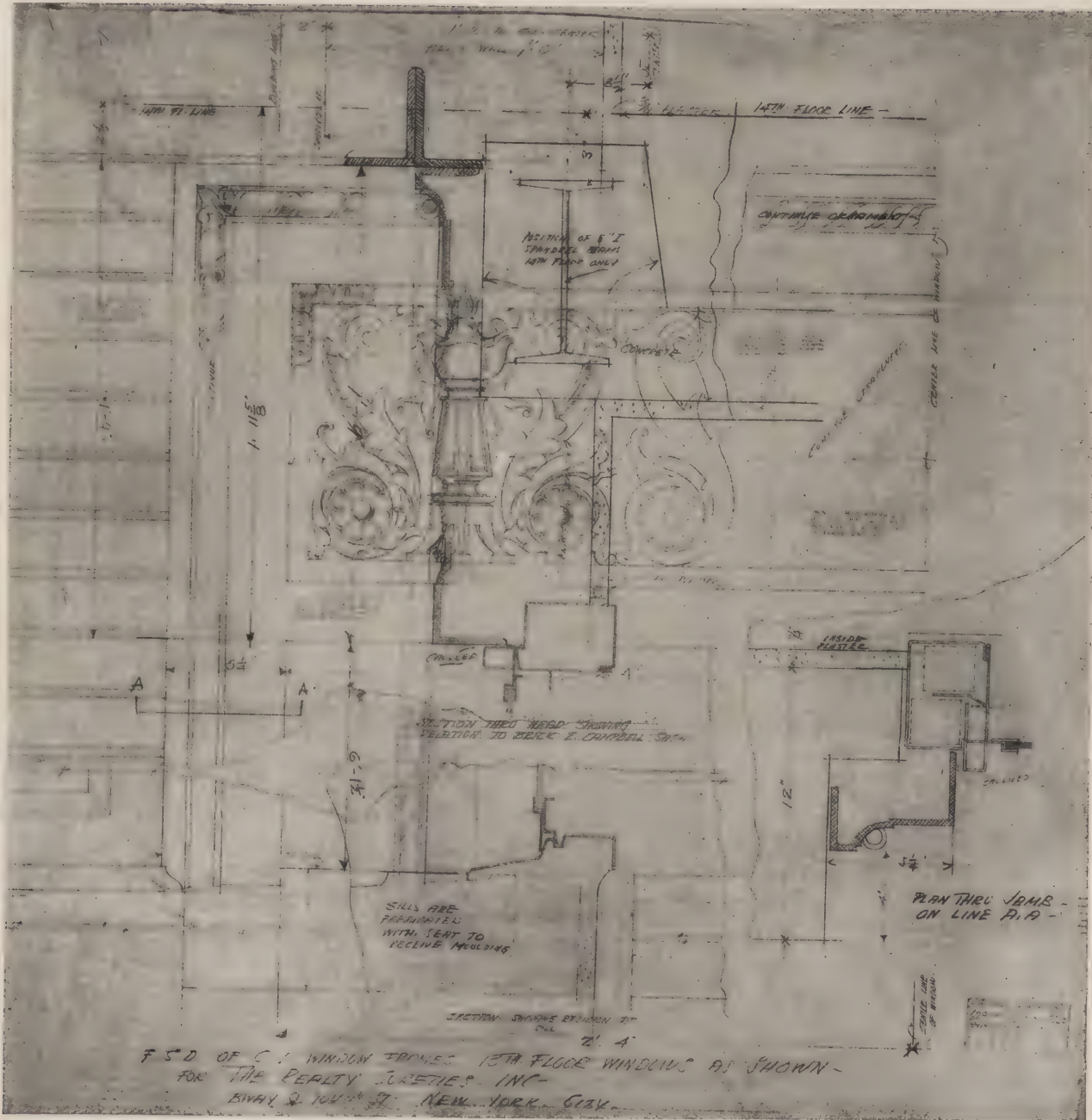


Figure 4. Full Size Detail of Cast Iron Window Frames. Non-Housekeeping Apartment Building for the Realty Sureties, Inc. Carrère & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

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Figure 5. Full Size Detail of Panel with Ornament, Third Street Façade, Bank of Niagara, Niagara Falls, N. Y. Carrère & Hastings, and Shreve, Lamb & Blake, Architects.

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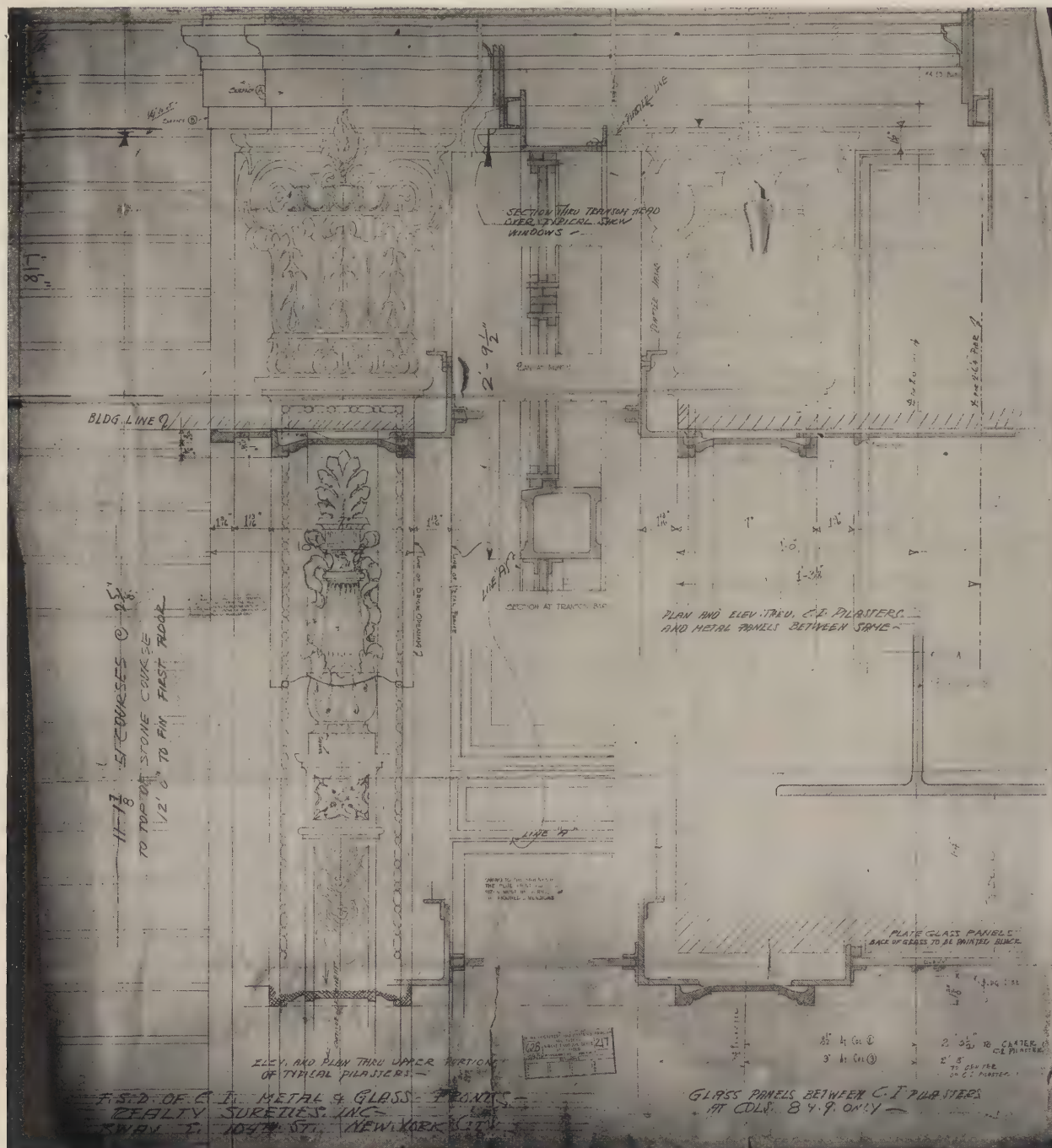


Figure 6. Full Size Detail of Cast Iron Metal and Glass Fronts. Non-Housekeeping Apartment Building for the Realty Sureties, Inc. Carrère & Hastings and Shreve, Lamb & Blake, Architects.

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represents the owner and is responsible to him alone. The architect must see and know that each specialist performs his work well and in harmony with all others.

In order that each specialist may clearly understand how to perform his particular work, all drawings must be prepared with this point in view, and especially so for full size details. The specialist who is to execute the ornamental iron work is not particularly interested in knowing how the wooden window frames are to be executed, etc.

Wherever possible, prepare details so that they apply to a particular kind of work, but show also on the same drawing such parts of other work as come in connection with, and are related to, the work which is to be executed from the particular detail. For example—in making a detail of an iron grille it is most necessary to show how the grille is related to the stone or brick opening in which it is to be placed, etc.

For small work it is very practical at times to make a complete detail including many trades—such as on a detail of an entrance porch and door, the leaded glass, metal gutters, stone or brick steps, etc., can well be shown.

As a general rule, do not show kinds of work unrelated to each other, or work widely separated, on the same sheet; as for instance, an ornamental plaster cornice of the living room has no relation to, and is widely separated from, the kitchen dresser.

The men at the job prefer as a rule to work from drawings relating to their particular part of the work and very often cut the blue prints into parts, retaining only such portions as interest them.

Blue prints of full size details are handled a great deal at the work or in the shops, and at times (owing to the size of the prints) are perhaps unavoidably mishandled; for this, as one reason, do not make drawings any larger than absolutely necessary. Also remember for the sake of economy, blue print charges run up very rapidly, and over size details are responsible for unnecessary costs.

Arrange detail sheets compactly, but do not cramp, and above all make the drawings clear and simple. Remember that "the fellow" on the job who has to read the drawing for the execution of the work, cannot always run in to see the man who made the drawing and ask questions, so let the drawing do as much of the talking as possible in clear language.

The drawings illustrated with this article were selected from the general office files of routine work and are not intended to show any standard methods of preparation or typical details of construction.

Many good works have been published, showing more or less typical scale and full size details. Reproductions of executed work and illustrations of the details, either measured from the work or of drawings used for its construction, are to be found in the library of every architect's office. Study all such works carefully. Time spent in the library for intelligent study, even during working hours, is not wasted and is for the good of the office. It is also very necessary to keep posted about materials and methods of construction from the catalogues pub-

lished by the manufacturers and dealers in building materials.

Every detail is a problem of its own to be solved by the man who makes the drawing.

The drawing and sketch illustrated by Figures 1 and 1-A have already been considered, merely as a suggestion for the arrangement of detail sheets.

Figure 2 shows a full size detail of an entrance door and porch. On this drawing the $\frac{3}{4}$ -in. scale drawings of the work have also been shown. On smaller work this arrangement is quite safe, especially if the indications of work required are clearly shown on the $\frac{1}{4}$ -in. or $\frac{1}{8}$ -in. scale general drawings. As a rule, however, it is better to make separate drawings for the $\frac{3}{4}$ -in. scale details and for the full size details. In this case the $\frac{3}{4}$ -in. scale drawings act as key drawings.

On $\frac{3}{4}$ -in. scale drawings of typical work, such as details showing types of doors, windows, running office partitions, etc., full size details can be shown to advantage; for usually sections through mouldings, rails and stiles, jambs, etc., do not require much space.

The full size detail illustrated by Figure 2 is well made and shows the result of careful study.

The mill man cannot go wrong in cutting mouldings as detailed, and any intelligent workman can build the work as shown.

Figure 3 shows a part of a detail made for a stone entrance door treatment.

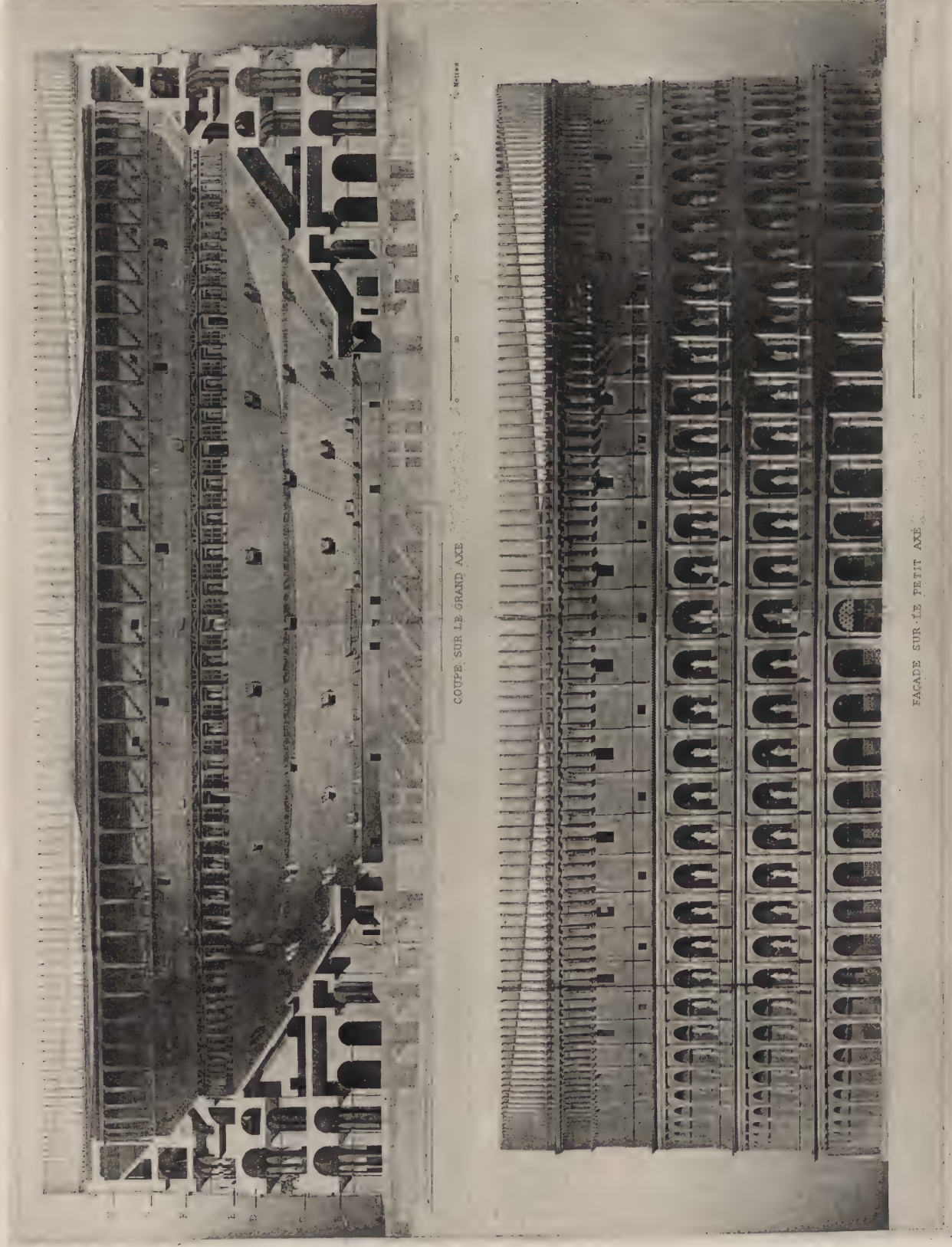
From the very character of this drawing, stone work can be clearly read and no stretch of imagination or of unnecessary words is required to say this. All drawings should, and good drawings do, indicate the actual materials which they portray, not merely by showing the cuts of properly used mouldings and ornaments, but by real technique in indication.

Note how the ornament is indicated on the above mentioned detail, the very life and motion can be understood therefrom. To draw ornament too exacting and laboriously is not necessary and also acts as a check rein on the imagination of the modeler. It is very necessary however that the general mass and character of ornament be shown and in harmony with the design.

In describing the details as illustrated by Figures 2 and 3, liberty was taken to wander a little from the drawings under consideration—first to tell about detailing $\frac{3}{4}$ -in. scale drawings and full size details, being drawn on the same sheet, and secondly to say a word about drawings expressing the material for which they are made. Just one additional remark may be allowed—when drawings are made with the clear understanding and feeling that they are the result of pure reasoning and expressions of joy from within, the outcome must be good and pleasing.

Figure 4 shows a part of a full size detail of an ornamental cast iron treatment around windows. In this case it was very necessary to indicate details of other work relating to the detail for the particular work required and such other conditions indicated then become, in equal force, necessary

(Continued on page 63)



THE COLISEUM, ROME
FROM H. D'ESPLOY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

On the other side of this sheet is reproduced a plate showing a restoration of the Coliseum, Rome. The Coliseum was built partly by Vespasian and partly by Titus who succeeded him. Excepting the top story shown in this restoration, which is supposed to have been added in The Third Century, it is interesting to note the resemblance of the section in the upper part of this plate to the present-day type of motion picture theatre, as seen from the stage. The vomitoria, or passages for the entrance and exit of patrons at various levels, have been found the most satisfactory solution of the problem of handling large crowds at the present day as well as in the time of Imperial Rome.



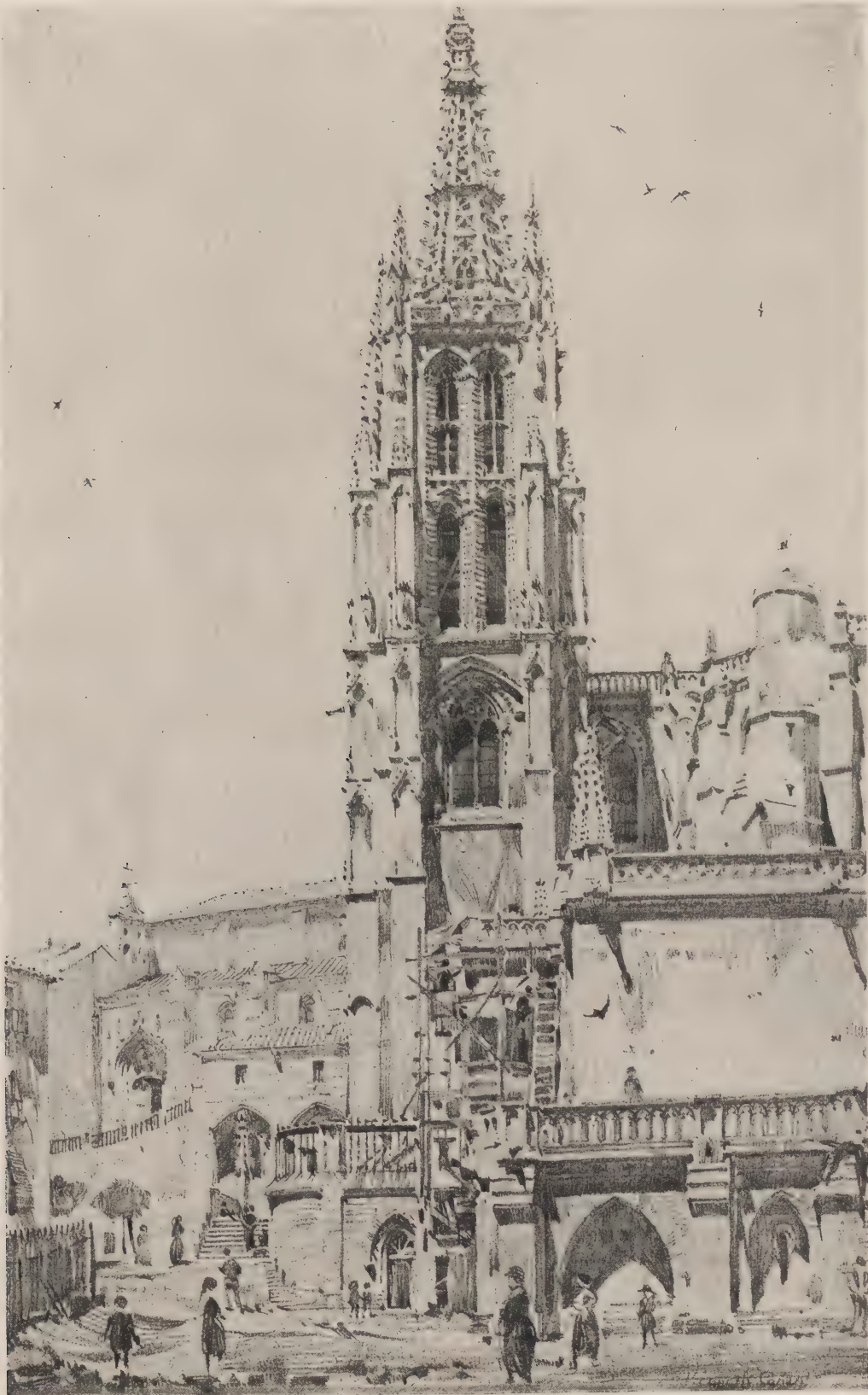
PENCIL SKETCH BY ALBERT KAHN, FIREPLACE IN MAISON
DE AGNES SORREL, ORLEANS

The pencil sketch on the other side of this sheet is one made by Albert Kahn and is an excellent example of the kind of sketch that is most useful for architects or architectural students to make of fine old detail to serve as a means of study and for preservation as a source of inspiration in their work. The care and fidelity with which the character of the original has been preserved in this sketch as well as the excellence of the pencil technique is notable.



SKETCH BY ANDRÉ SMITH. A BIT OF OLD PARIS

The sketch showing "A Bit of Old Paris," reproduced on the other side of this sheet, is an interesting example of the work of André Smith in quite a different manner from many of his other sketches which are made in fine line. This sketch shows a combination of pencil and color and a free and vigorous handling of masses.



SKETCH BY KENNETH CONANT
SOUTHWEST TOWER OF THE CATHEDRAL, BURGOS, SPAIN

A sketch, in which the pictorial quality and the rendering of architecture are combined successfully with admirable pencil technique, is shown on the other side of this sheet. This is one of the many sketches made by Mr. Conant during his extensive travels and is one of the series from which several other subjects have been reproduced in the pages of this journal.

HOTEL ARCHITECTURE FROM A HOTEL MAN'S VIEWPOINT PART II

BY ROY CARRUTHERS

This is the second installment of a serial article in which Mr. Carruthers, who is Managing Director of the Waldorf-Astoria Hotel, will tell what are the practical requirements in hotel design from the hotel man's standpoint. Mr. Carruthers will discuss design character, planning and equipment.—Ed.

THOUGH the shape of the plot upon which the hotel is to be built and the grade of the streets bounding the plot and other special conditions are important factors in determining the plan of a hotel, there are certain fundamental requirements governing the relation of the public rooms to each other and of the kitchen to the rooms in which food is to be served. These requirements are so obvious that it would seem hardly necessary to name them if it were not for the fact that many hotels, strangely enough, have been built without due regard to these very requirements. An excellent example of the proper location of the public rooms of a hotel is to be found in the plan laid out by George C. Boldt for the Waldorf-Astoria.

In this hotel the main kitchen is so located as to be directly accessible from the several dining rooms on the ground floor. It lies under the center of a great square formed by these and other public rooms. Along the Fifth Avenue front of the hotel are the Empire Room and the Rose Room, occupying a frontage of 200 feet, and each has an entrance to the kitchen. In the northwest corner of the building, on 34th Street and Astor Court, is the North Café, and in the southwest corner, 33rd Street and Astor Court, is the Bradley Martin room, or grill. Both of these rooms have direct access to the kitchen. The Garden Room and the Palm Room, where tea is served in the afternoon, are in the center of the ground floor, directly over the kitchen.

There is a battery of dumb waiters serving the rooms on the floor above the ground floor, including the banquet rooms, private dining rooms, grand ball room, concert room and the Astor Gallery. The Waldorf Roof Garden has a complete kitchen service on the roof.

The Palace Hotel, San Francisco, has a seating capacity of about four thousand on the main floor using the two grills, the Palm Court, Rose Room, Concert Room, ball room and private dining rooms. The kitchen of this hotel is on the ground floor, at one end, and these rooms are arranged in such a way that direct access to the kitchen is had from each of them. The Palace Hotel, like the Waldorf-Astoria, occupies an entire block.

In the Olympic Hotel, Seattle, plans for which have been drawn by Geo. B. Post & Sons, Architects, we have an example of a hotel of moderate size in a typical American city. Here, as will be seen by reference to the plan on page 40, the kitchen is on the same floor as the main dining room and at one end of it. The arrangement of the rooms

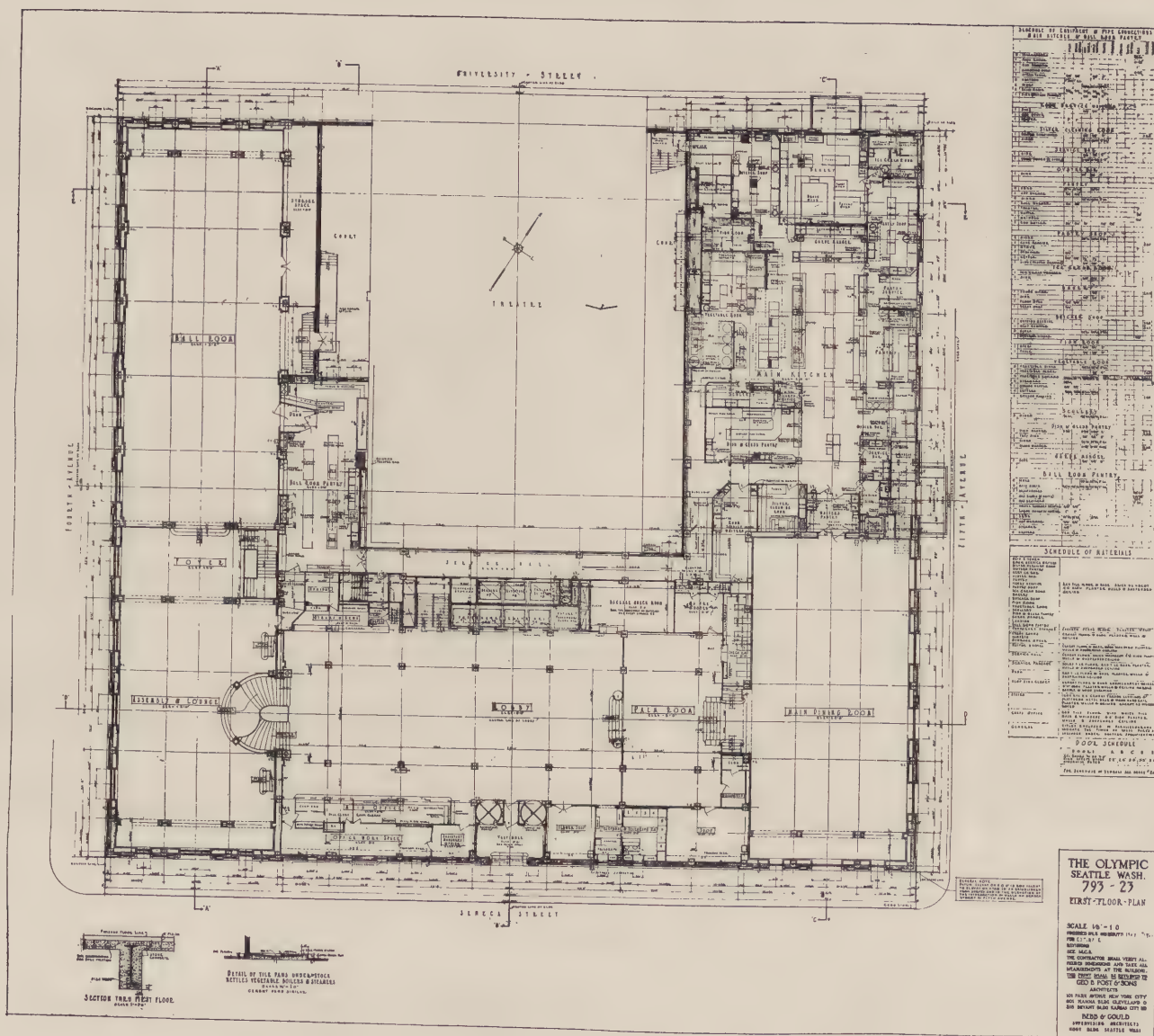
in this case was determined by the fact that the ground slopes rather sharply south and west. The first floor, upon which are the principal rooms, has been established at the level of the upper end of the plot. This gives a complete story under this floor at the southwest end of the building, for stores and other purposes. How this works out may be seen by reference to the perspective of the Olympic Hotel, published on page 25 of the June issue of PENCIL POINTS. Directly under the kitchen are the grill room, the grill lunch and the lunch counter rooms. Owing to the slope of the ground, the grill room, though in the story below the first floor, is not below grade but is on the level of the street. The whole arrangement of the principal rooms has been worked out remarkably well, giving certain differences of floor level and vistas which are most attractive.

The arrangement of entrances and exits for the kitchen of a hotel must be carefully worked out so that the lines of travel of the waiters will not cross each other and dishes going from the dining room will not cross dishes coming into the dining room. Adherence to this principle will save the operators of the hotel enormous sums otherwise lost through breakage. Wherever possible there should be three doors giving communication with the kitchen, namely, an egress and entrance for waiters and an exit for used dishes, which are then put on sorting tables and passed on to the dish-washing machines. A regular route should be laid out for the travel between the kitchen and the dining room and within the kitchen for everything and always along lines of least resistance and non-interference.

The architect who has not had a great deal of experience in hotel planning usually thinks too much of the bed rooms and not enough of the working parts of the hotel—the kitchens, the facilities for handling help, etc. The importance of this part of the house can be understood readily when one realizes that the Waldorf-Astoria has fourteen hundred employees, an excess of two hundred over the capacity of the house for guests. This hotel, because of the character of its patronage, has a capacity of twelve hundred guests, which is much less than that of a hotel largely for transients. The number and size of the public rooms as well as the spaciousness of the accommodations in general accounts for this difference.

Commonly there is not enough working space allowed, not only in the kitchen but elsewhere. Too often the operator is cramped for service elevators, store rooms, storage space in the kitchen, ice box

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Plan of First Floor, The Olympic, Seattle, Washington. Geo. B. Post & Sons, Architects.

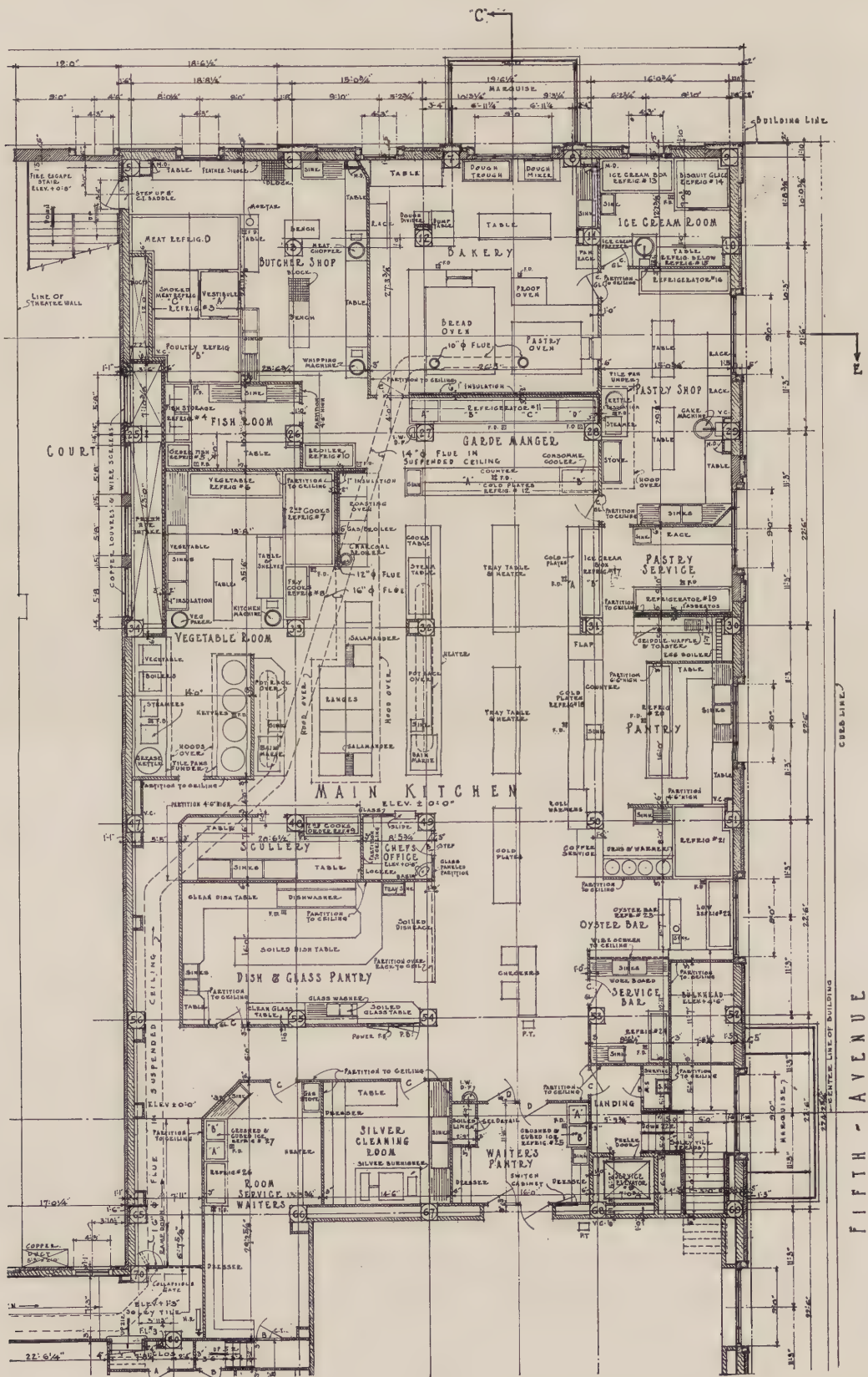
capacity, etc. Not infrequently one hears of restaurants that have a larger capacity than the kitchens are able to properly serve and all too often the kitchen capacity cannot be made to keep pace with the expansion of the restaurants and dining rooms. If the working parts of a hotel are cramped at the beginning what may be expected to happen when the house has obtained a fuller growth? It has very frequently been found that the hotel is not built large enough for the town and that it is necessary, from time to time, to put on additional rooms, sometimes doubling the capacity. If this development has not been foreseen at the outset in planning the building, there are sure to be serious difficulties in operating it as its business increases and it will be necessary to go to great expense to fit the working part of the house for handling the increased load that comes with the putting on of additions. This is a problem that should be given much serious con-

sideration and the plans should be carefully worked out for increasing the capacity not only in the rooms but in the working part of the house.

An example of provision for expansion is found in the design of the Olympic Hotel, Seattle. This is a six hundred and seven room house, but steel is going into the lower portion to later carry a superstructure accommodating three hundred additional rooms. This provision for expansion consists in arranging for the future construction of a wing on top of the portion now containing the kitchen. As first built this portion will have only one story above the kitchen, a floor occupied by private dining rooms, meeting rooms, etc., but the steel will be in upon which to erect the proposed future wing without tearing down, rebuilding or reorganizing any portion of the house.

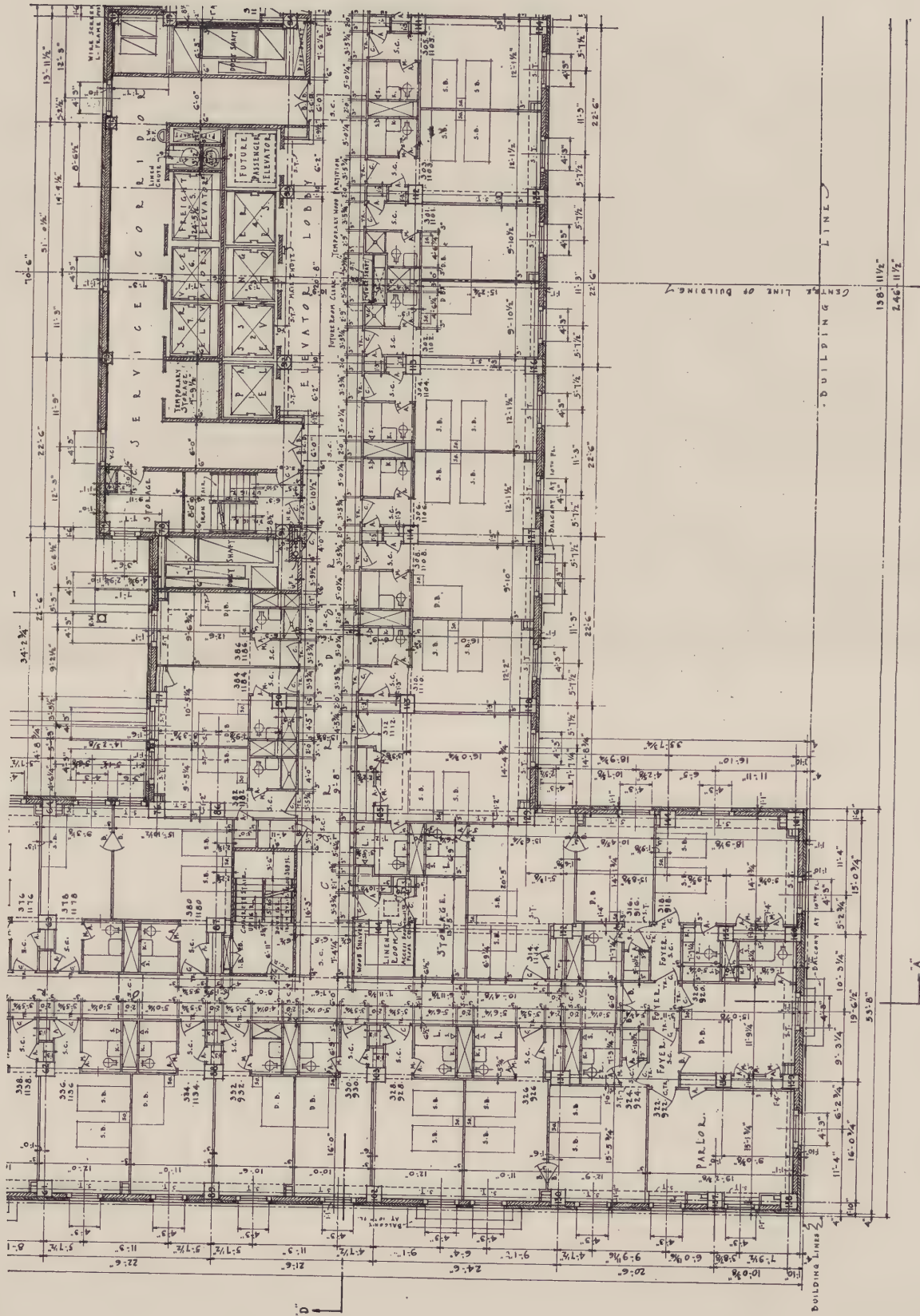
One of the most notable features of present-day planning of bed room floors is marked by the pass-

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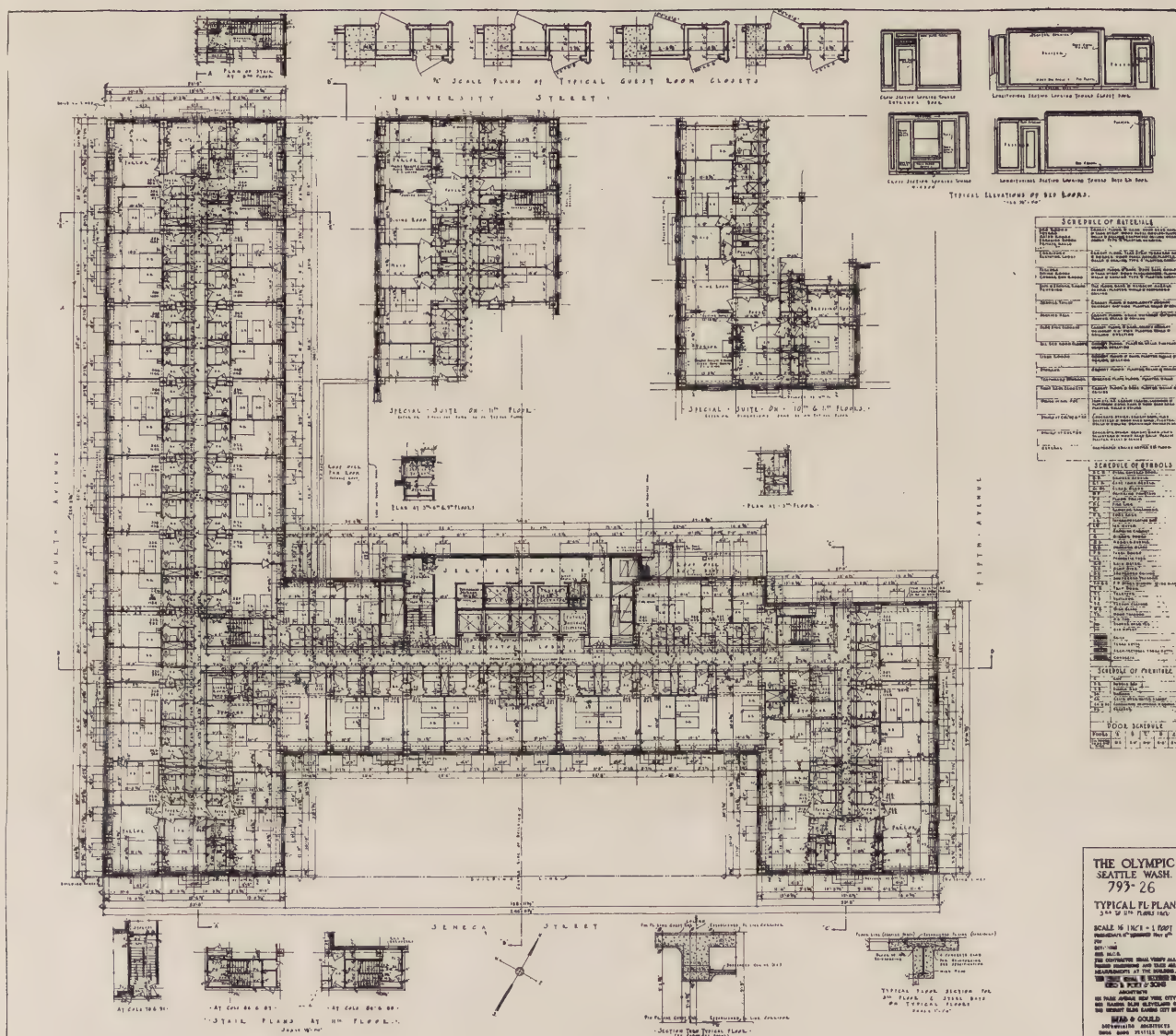
Plan of Main Kitchen, The Olympic, Seattle, Washington.
Geo. B. Post & Sons, Architects.

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Portion of Plan of Typical Floor, The Olympic, Seattle, Washington. Geo. B. Post & Sons, Architects.

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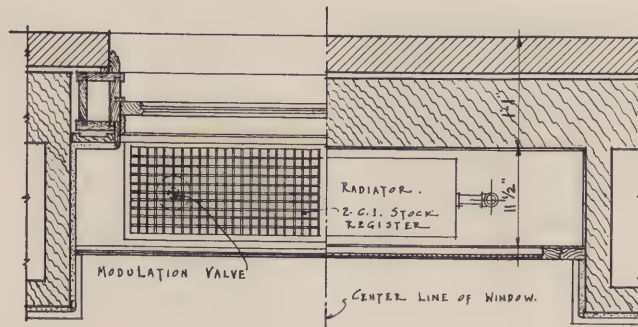
Typical Floor Plan, The Olympic, Seattle, Washington. Geo. B. Post & Sons, Architects.

ing of the vogue of the outside bathroom. With the present-day perfection of plumbing appliances and of means for ventilation there is no good reason for placing the bathrooms on the outside and the advantages that accrue from the placing of the bathrooms on the inside are very great. Chief among these advantages is the increased window space made possible in the bed rooms. With inside bathrooms the whole outer wall can be given over to the bed rooms. Another advantage is the improved shape of the room, which was unpleasantly long and narrow when outside bathrooms were placed between the rooms. With the inside bathrooms the bed rooms become more nearly square and are consequently more pleasing and are of a more practically useful shape. Another advantage of this newer way of planning bed room floors is that with the bathroom placed along the corridor, each bed room is naturally reached through a little passage of its own that serves as an entry to the room, giv-

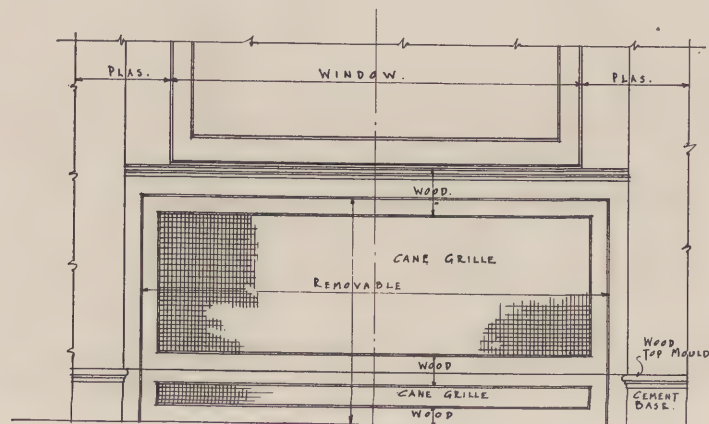
ing both a sense of greater privacy and a real relief from any noises arising in the public corridor. From a practical standpoint this placing of the bathrooms is compact and economical, for the shaft between them serves not only for ventilation, but as a pipe shaft carrying the lines of plumbing for both bathrooms, and, where the radiators are placed against this wall, the heating pipes as well.

This placing of the radiators is, however, in my opinion not desirable. The radiators for several reasons should be where they do not project into the room. When placed under the windows they meet this requirement. When placed in the room they are not only more or less unsightly, but they are in the way and much damage is always occasioned by the careless striking of furniture against the radiators so placed, an item of considerable importance in the operation of a hotel. Detail of radiator enclosure for the Olympic Hotel, Seattle, is shown on page 44.

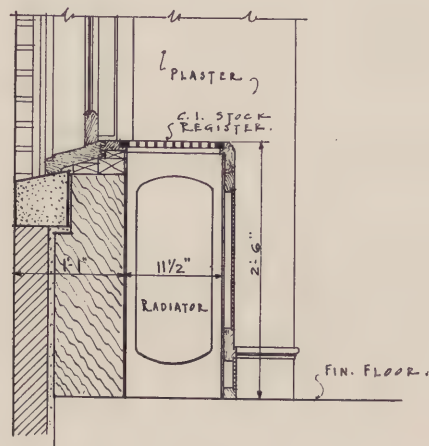
PENCIL POINTS



HALF PLAN ABOVE WINDOW STOOL. HALF PLAN BELOW WINDOW STOOL.



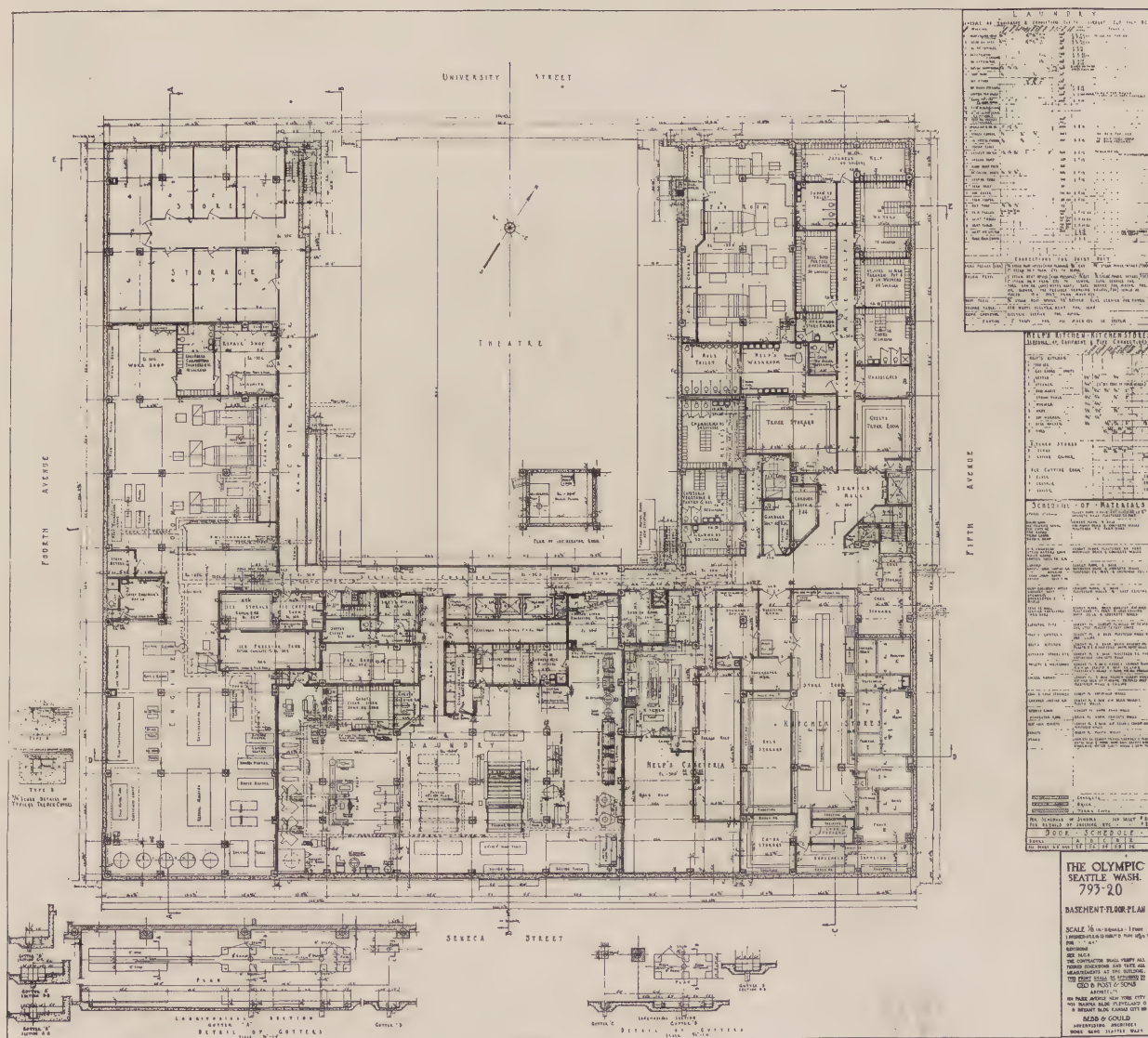
ELEVATION



SECTION.

*Detail of Radiator Enclosure in Parlors, etc.
Typical Floors, The Olympic, Seattle, Washington.
Geo. B. Post & Sons, Architects.*

PENCIL POINTS



Basement Floor Plan, The Olympic, Seattle, Washington. Geo. B. Post & Sons, Architects.

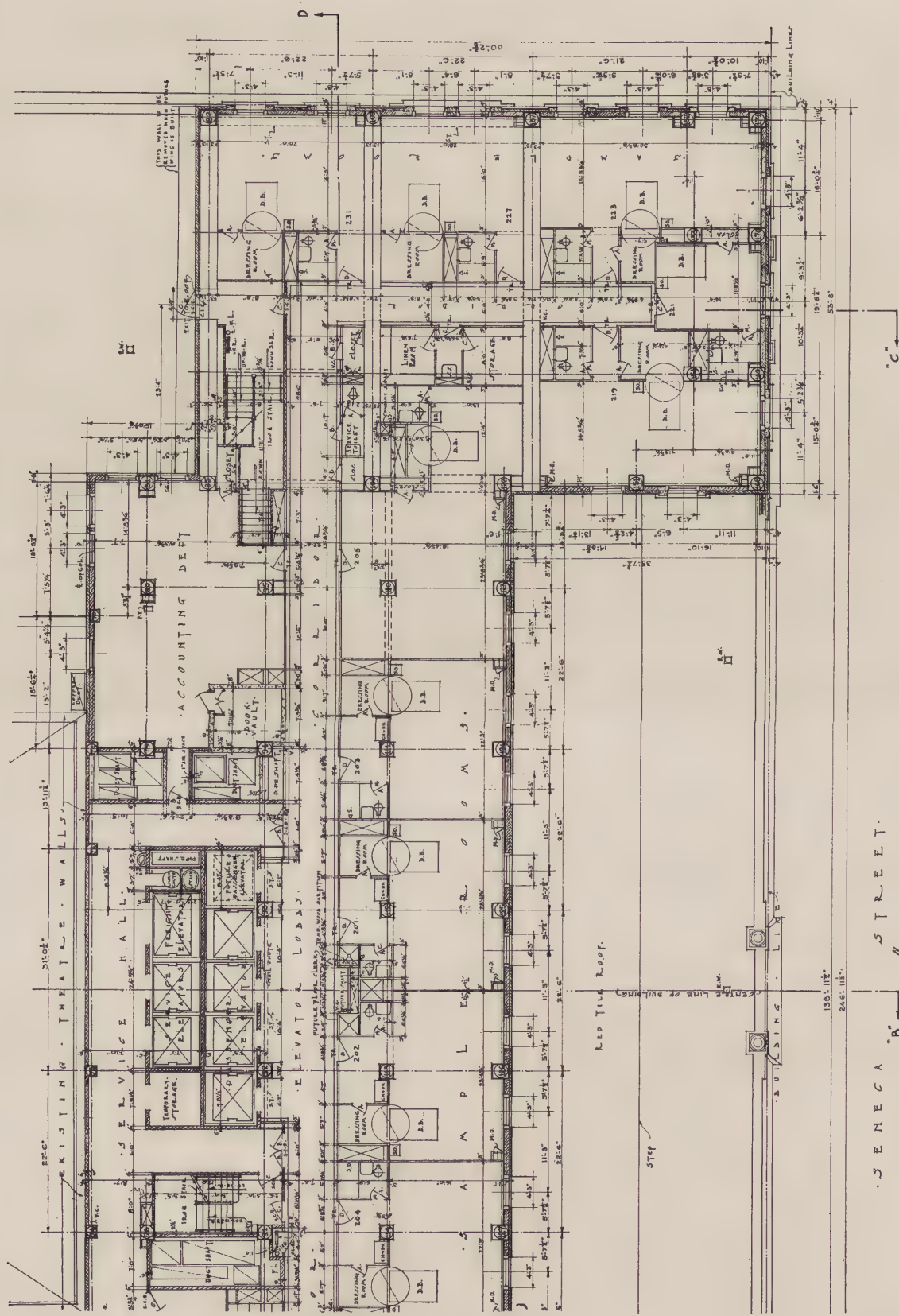
A most important feature introduced in recent years is the type of bedroom doors containing a closet-like arrangement of sufficient capacity to permit the guest to place within it clothing to be pressed, shoes to be polished, or parcels to be called for and for deliveries to be made through this same medium. This obviates the often unpleasant necessity of opening the room door to take in or hand out parcels and greatly facilitates the service of the guest. A not inconsiderable advantage lies in the ease with which clothing can be left for pressing, as this increases the volume of valet service and making this concession a more valuable one.

The sample rooms that form a necessary part of the accommodations of many hotels should be given careful consideration in the planning of the house. When a travelling salesman rents a sample room he has a right to expect a room so designed as to enable him to show his goods to the best advantage. A sample room should be light and airy and should

be provided with the necessary artificial light for the proper display of samples. Sample rooms sometimes are found under stairs, in the basement, or placed in other undesirable locations and they are not satisfactory to the salesman or to his customers.

The friendship of the travelling salesman is important to the hotel, for not only is his patronage a source of revenue, but if he is pleased with the treatment accorded him he becomes a widely influential salesman for the hotel. While it is sometimes said that a travelling man expects more than the average guest, I must say that in my experience I have never found the commercial traveler an unreasonable guest. It is only right that he should have a room suited to the proper display of his merchandise. It is desirable to have the room so arranged that the salesman may sleep in the same room that he uses for the display of his samples and it is also desirable that during the day this

(Continued on page 63)



Portion of Plan of Second Floor (Showing Sample Rooms), The Olympic, Seattle, Washington.
Geo. B. Post & Sons, Architects.

THE STUDY OF ARCHITECTURAL DESIGN

WITH SPECIAL REFERENCE TO THE PROGRAM OF THE BEAUX-ARTS INSTITUTE OF DESIGN

REVIEW

BY JOHN F. HARBESON

In this series of articles, which began in January, 1921, Mr. Harbeson has explained the method of working and how to get the greatest benefit in following the program of The Beaux-Arts Institute of Design through the Class B Problem and the Archaeology Problem. In this issue he reviews the ground covered and points the way to close co-operation in atelier work.—Ed.

THE student has now reached a stage in his career when it would be well to take account of the future—and of his success thus far.

In the first place has he any doubts as to his desire to stick at architecture? If there is any doubt about it, now is the time to thrash out the question in his own mind—with the help of any serious advice he may be able to call upon. He has already spent a considerable amount of time in studying to fit himself for his profession. This time represents money. It could have been used at times for making money, undoubtedly. Technical training and the experience one gains in working are about the only capital that many professional men have. If there is a question of going into some other calling, it must be remembered that that calling will doubtless require some training and that training will take some time; if deferred too long, it would jeopard-

ize the success of the man in that line of work.

If you decide to continue in architecture, then you must realize you should continue your training. It is a great mistake to stop your study of design

with B class work. It would be like trying to practice medicine after two years in a medical school. If B class work has made you more valuable in an office—and to yourself—that increase in value is, in reality, small as compared with the results of study in the Class A projets. As in all training, the knowledge gained is cumulative, and the ability to increase one's knowledge, the speed with which one's knowledge is increased is accelerated progressively, with each step. It is poor business to stop your study at this point.

But this is a good time to go over what you have done and see if there are any weak corners in your ability.

Early in these papers we spoke of the esquisse—of its value in

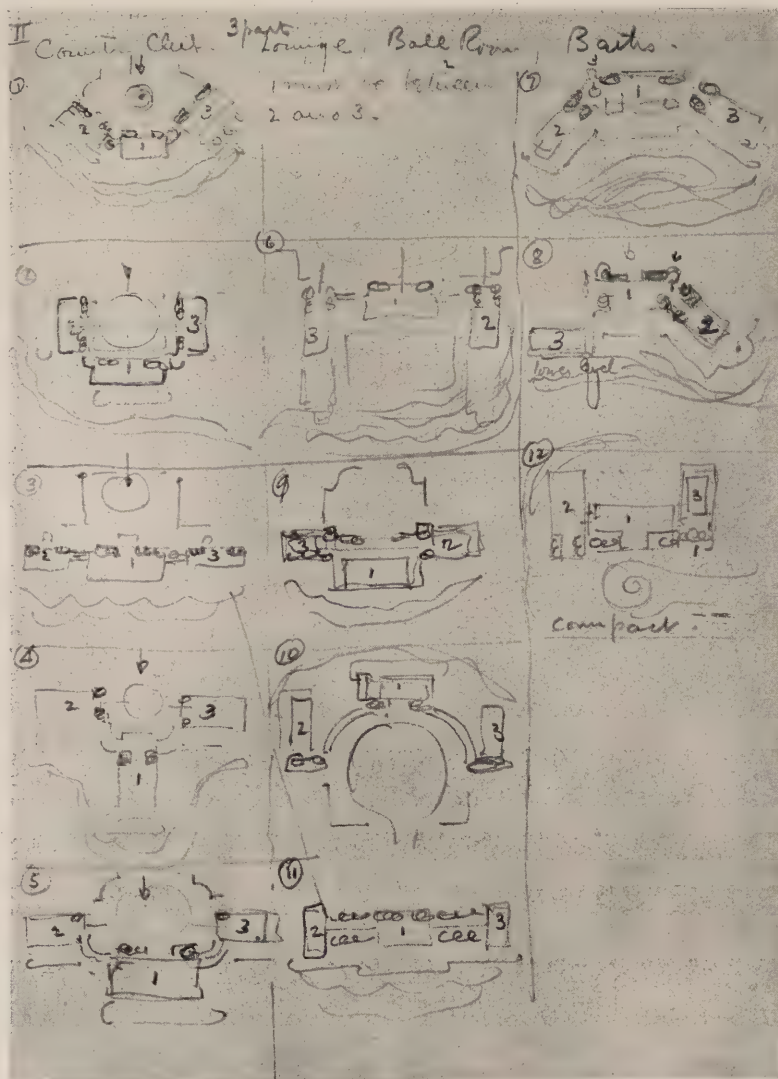


Figure 1. Diagram of Parti for "The Casino of a Country Club."



Figure 2. Concours Labarre "Un Station Estivale." Design by M. Grégoire, Pupil of M. Paulin.

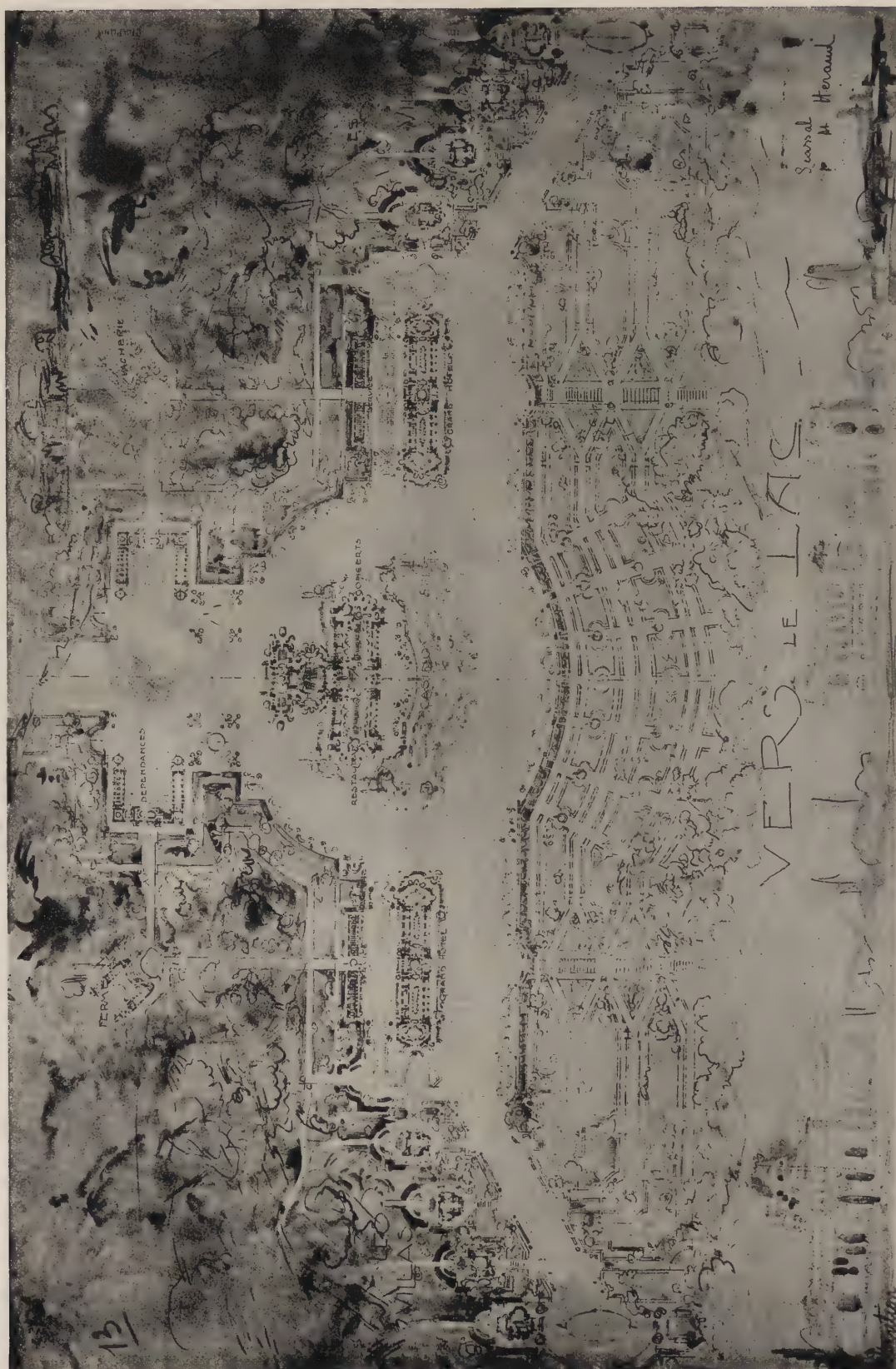


Figure 3. Concours Labarre, "Un Station Estivale." Design by M. Séassal, Pupil of M. Héraud.



Figure 4. Competition Design for Nebraska State Capitol Design. By Paul P. Cret and Zantlinger, Borie & Medary, Associated Architects.

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mental training. Do you make a good esquisse? Or do you find yourself often struggling through a problem, trying to make something out of a poor esquisse—an esquisse that really does not solve the problem?

If so, it would be worth your while to make a real effort to improve in this direction. One way to do so is to take every esquisse—whether B or A class—archaeology or prize problem, simply for the training to be had in thinking out a parti.

After the others have turned in their esquisses discuss your solution with them. Make a little diagrammatic note of the different solutions as in Figure 1. If you live near New York, go to the exhibition after the judgment of these problems and add to your diagrams the new solutions you will see there, noting especially the premiated design. If you cannot see the exhibition, watch for the publication of the premiated drawings and then add these solutions to your diagram. If you do this for a number of problems you will see that the programs call for a "three-part scheme"—meaning there are three important divisions—or a "four-part scheme" or a scheme in which there is only one dominant part, etc., etc., and that in each of these divisions there are several different arrangements that it is well to know.

Another similar scheme for improving one's ability at finding a parti was suggested by the late John Wynkoop, one of the early winners of the Paris Prize. It was to take one of the programs in a volume of "Les Concours d' Architecture de l'Anée Scolaire 19 -19 " and try in the same way to form a solution for it, or several solutions, and choose that which you feel to be the best; then turn over to the plate pages where the solutions are shown, and note the premiated parti. For this purpose the Annual Competition for the Prix Labarre is particularly good, for it is a sketch problem principally in the finding of a parti, and usually ten or twelve of the solutions are reproduced. Figures 2 and 3 are two such solutions for a Summer Health and Amusement Resort. To do this, one must have some knowledge of French, to be able to read the programs—or have some lessons in grammar and the use of a good dictionary.

If you ever expect to do competition work, it is well to remember that your success will in large measure depend on your ability to find a "parti."

Aside from the esquisse, have you studied your problems well? Have you planned your time so that you were able to make a good presentation? Did you get the most possible out of your critic? Do you present your thoughts to him as complete ideas—plan, section, elevation, even if only in sketch form?

Do you study a problem logically? Do you try out many ideas or keep in a rut on the first one that suggests itself to your mind? Do you confine your thoughts at the beginning of a problem to study of the big idea, and then gradually work to the detail

**The work done at the Ecole des Beaux Arts in Paris, published each year at inexpensive prices by A. Vincent, 4 Rue. des Beaux-Arts, Paris, and obtainable by mail without the payment of duty, being entirely in a foreign language.*

at the end, or do you think about details from the start and thus cloud the big ideas?

Do you use documents in studying your problems, to give new viewpoints, to build up a vocabulary of forms, of ideas, of schemes? Do you note what gives character to plans, elevations, sections and details?

Can you draw well enough to express your thought—render well enough to present it to best advantage?

This is a good time to put such questions to yourself. If you find weak spots, concentrate on them at this time so that when you go on to class A you may not be handicapped in competing with others who are well prepared.

And do not forget that one of the greatest advantages of studying in an atelier is the spirit of co-operation—the give and take, the willingness to help others, whether higher or lower in the scale of attainment. Do not avoid "niggering" for the A class man, or for one of your own class, who has fallen behind. The atelier's good will be your good—its success will be your success; if you can win the prize yourself, well and good—but at any rate, *try to have some one in your atelier win it.* If there are three prizes, try to have your atelier win all three—it may not do so, but this is the spirit that will bring success to the atelier, and to you.

Do not think that "niggering" is doing a favor to someone else. The good in it is largely to you; if you have any doubts about it, try it in your office. Ask if you can help with a big perspective,—stay after hours and ask if you may help with a presentation drawing. Do you know someone who is expert at rendering? Ask him if you may run some small washes,—put in small shadows, and put in the ruling pen shadows, under his direction. When you make your next problem you will see just what it has done for you. Figure 4 is such a rendering, by Paul Cret, in which the ruling pen shadows, small washes, etc., were done by young men who wanted to "nigger" on this competition drawing. Doing team work is the means by which many successful men have made their own place in architecture. Try it for yourself and see.

THE NEW HAVEN EXHIBITION.

THE Year Book of the Architectural Club of New Haven and Catalog of the Fourth Annual Exhibition, is an interesting volume. This year's exhibition was given jointly by the Architectural Club of New Haven and Hartford architects and included work from New Haven, Bridgeport, and other parts of the state, also from New York and Boston as well. Among the most interesting exhibits were those of the work of students of the Yale School of Fine Arts, exhibited under the direction of Professor Stevens. This exhibit included some fifteen drawings by Connecticut boys who have taken high medals in the judgments of the Beaux-Arts Institute of Design.

The exhibition was held in the public library and completely decorated the entire exhibition room on the second floor of that building.

THE SPECIFICATION DESK

A Department for Specification Writers

SPECIFICATIONS FOR CRITICISM.

ACTING on the suggestion of one of our readers, Mr. M. N. Nirdlinger of Nirdlinger and Marlier, Pittsburgh, we have secured a set of architect's specifications for a brick and hollow-tile residence and we are printing this set of specifications in order that they may be criticised by our readers. Last month we printed the third installment and in this issue we continue. The object in doing this is to provide material for a discussion that will be helpful to all who have to do with the preparation of specifications by showing up the weak points in this set of specifications.

You are invited to join in and help rip up these specifications. We are withholding the name of the architect from whom we borrowed these specifications and he has entered into the spirit of the thing so you may feel at liberty to criticise them as severely as you like. We hope that you will also present many suggestions for improvement. The good resulting from this discussion will be in proportion to the number of men who join in with criticisms and suggestions, so we ask that you do not depend on the other fellow doing it but write us yourself, then the thing will be a success. Here is another portion of the specifications—let's have your criticism.

ELECTRICAL WORK.

(Continued)

OUTLETS:

Aside from the outlets and switches specified a center distributing point is to be located in basement, at which point, an approved tabletboard is to be erected; the circuits on said tabletboard to have E— Plug fuses. Tabletboard also to have main switch, which is to be protected by new code enclosed fuses. There are not to be more than eight sixteen candle power lamps on any one circuit.

Tabletboard to be contained in proper steel cabinet and to include door, hinges and snap lock.

This contractor will include an extra circuit from tabletboard out through rear wall 5'-0" including cable. The above line is for the proposed garage.

FIXTURE SUPPORTS:

Where no stationary supports for fixtures are provided, such as gas pipe, etc., the contractor shall erect at all ceiling and side outlets, a suitable foundation consisting of a wooden block firmly secured between joist or studding, allowing an air space of one-half inch to inside of lath line. This block to be of sufficient dimensions to properly support fixtures in place.

SWITCHES:

Switches for first and second floors are to be flush push and are to be of "H—" or "D—" H" make or approved equal. The finish of flush push switches to be brush brass excepting at bath rooms which will be N. P. and dining room which will be silver.

Where more than one switch is placed together, they shall be mounted in a gang, there being one plate used.

Switches to be placed at locations shown on accompanying plans. Snap switches to be used exclusively in cellar and attic. 3" space to be kept between trim and switch plates in all cases.

RECEPTACLES:

Flush plug receptacles shall be s. & h. C— or M— Manufacturing Co.'s make or approved equal, and shall be placed in floor and baseboard at locations shown on drawings. The plate of receptacle to be finished to match the hardware in same room.

The flush plug receptacles in the building to be con-

nected on separate circuit, and to be controlled from the tabletboard.

PROTECTION:

The contractor, on completion of his work, shall use such precautions as deemed expedient for the protection of wires and appliances from mechanical injury throughout the building.

BELLS AND BELL WIRING:

Wiring for electric bell system to be of approved materials and workmanship and in no manner to come in contact with electric light or telephone wiring. Furnish and install at kitchen Numbered annunciator No. 125 type as manufactured by E— & Co., Inc., it being understood the size of annunciator to be governed by requirement of the following specifications; said annunciator to be finished in light oak. This contractor will count on bell from kitchen door to kitchen, from main entrance door to kitchen, from cellar entrance door to kitchen, from dining room to kitchen, at this point he to count on floor push complete with floor and cord extension. He will also count on bells from two second story bed rooms and second story bath rooms to kitchen. Bell from owner's bed room to kitchen will also ring in attic hall with cut-off switch at second story hall. Dining room call shall be on a separate buzzer located at kitchen. If possible buzzer to be directly over annunciator. All bells to be operated by approved type bell ringing transformer.

TELEPHONE WIRING:

Contractor will drop wires from points of location for telephones at first and second stories where marked on plans so that telephone for the ——— Telephone Company can be installed without inserting wires after completion of building and as above mentioned in these specifications.

CERTIFICATES:

The contractor on award to furnish a copy of these specifications to the Board of Fire Underwriters of ——— County, and to file with it a corresponding application for inspection; said contractor to reform any infraction of the rules of the said Board of Fire Underwriters promptly on notice, and on receipt of final payment under said contract, to furnish a certificate of approval of said Board of Fire Underwriters, also Electrical Department of the City of ———, to the owner. All fees in connection therewith to be assumed by the contractor.

DROP CORDS:

This contractor will figure on furnishing neat drop cords with sockets and shut-offs on sockets for all cellar outlets.

UNDERGROUND CONDUIT WORK:

This contractor will give a separate estimate for running light and telephone conduit in from nearest light and telephone poles but not counting on crossing the street. Said price to be submitted per running foot.

He will also include the cables required in the conduit or the charges made by the respective companies for their own installation.

PLASTERING:

Lath all stud partitions, walls and ceilings throughout first and second floors and attic excepting storage space in attic and down cellar stairway to first floor line with the best No. 1 spruce or hemlock lath, well nailed and otherwise prepared for plaster, same to be plastered with good common plaster, 1/4" space to be left between all lath.

All lath to be free from bark and selected dry lath. No piecing will be allowed. Joints to be broken as is customary. 26 gauge herring bone metal lath to be used

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where necessary to cover pipes, pockets, at the joining of frame partitions and brick work, furring at arches, etc. On all the above work, as well as on all chimneys, brick walls, and the entire interior of building excluding cellar, lay two coats of mortar as hereinafter specified. All the above work to be carried down close to floors, behind all stair strings, wall base, etc., and join up close to all jambs, making all corners and surfaces plumb and square. This contractor will not figure on any lathing or plastering in bath rooms at second floor below 4'-6" from floor or on walls around shower bath as said rooms will have 4'-6" tile wainscots and shower will have tiled walls.

On the above work, place a skim coat, making a smooth, glossy and even surface. Said finishing coat must be kept clean and free from marks. Plaster arches, where shown, to be in keeping with drawings and full size details. Straight edge must be used freely, grounds will be put in place by general contractor.

This contractor will return before the completion of building and repair all cracks, etc., and leave the work perfect in every respect.

MORTAR:

Mortar shall be made up of the B—— Brand or approved equal hydrate of lime, long cow and animal hair and clean, sharp, river sand, properly mixed and tempered from beds made up at least three days before being used. Skim coat to be composed of white sand, white lime and plaster of paris in the usual quantities. (No wood fiber will be allowed in the above mortar.)

EXTERIOR STUCCO WORK:

This contractor will figure on exterior stucco work at main entrance hood and at circular insert in arch shown on side elevation. He will count on two coat work, the first coat being made up in proportion of 1 to 3, counting on either A——, A——, V——, L—— or U—— Portland cement and sharp river sand with 5% lime mortar mixed in same. The second coat will be similar to the above mix finished with a sanded finish and left ready for painting contractor.

CELLAR CONCRETE FLOORS:

Entire cellar to have concrete floor 4" thick, laid in the following proportions: one of A——, A——, L——, V—— or U—— Portland cement to three of sharp river sand and five of clean washed gravel; all to be thoroughly mixed dry then moistened and put in place, same to be well tamped. The finishing coat, which must be 3/4" thick, to be one of the above cements and two of Ligonier or line stone screenings, troweled to a smooth finish and even surface. Above floors in cellar to slope to bell traps at the rate of one inch to five feet. The bell traps to be flush with finished floors.

Great care must be used to trowel the cement up to the surface of the floors as a hard, glossy surface will be insisted upon. Put 3/4" cement finishing coat on stone walls at cellar windows at 45 degree angle which will form the inside window sills.

Cement floor similar to above specifications 3" thick will occur at all cellar window areas and will have a fall to drain outlets.

REINFORCED CONCRETE AND CEMENT WORK:

Steps and landing at main entrance, entire entrance and kitchen porch floor and front terrace will be built of reinforced concrete as hereinafter specified. The facing of concrete slab at entrance porch consists of brick which will be taken care of by brick contractor.

NOTE:

Entire front terrace cost shall be submitted by this contractor in a separate estimate.

The above entrance steps at main entrance and steps to kitchen porch to be built of design shown; this contractor to furnish necessary forms. He will also include triangular metal reinforcement. Concrete to be of mix hereinafter specified and this contractor will include a finishing coat troweled to a smooth and even surface in proportions of 1 to 2, counting on either A——, A——, V—— or L—— Portland cement and lime stone screen-

ings producing a granolithic surface. Above finishing coat to be 1" thick.

Entrance porch floor slab to be 6" thick reinforced with 1/2" and 3/8" twisted or other approved cold rolled steel bars spaced 6" on o. c. with proper bearings at the ends. Furnish and install five rows of said 3/8" rods equally spaced and run parallel with building. Above reinforcement to be kept up 1" from bottom of floor slab. The concrete for above floor slab to be of mix hereinafter specified and finished with a 1" finishing coat marked off in 12" squares, counting on a neat "V" cut joint free from feather edge. This contractor will allow off-set as required for brick facing which will be installed by brick contractor. Kitchen porch slab to be reinforced with triangular mesh reinforcement and shall have plain finish (no marking).

Floor slab at front terrace, cost of which is to be submitted under a separate estimate, will be similar to above specification for porch floor except that facing of terrace will be cement finish instead of brick.

Terrace slab will be reinforced, etc., as noted on plans and similar to above specification for porch floor.

Concrete for the above work to be made up in proportions of 1, 2 1/2 and 4, counting on either A——, A——, V—— or L—— Portland cement, sharp clean river sand and medium size gravel. Finishing coat to be similar to above specification for finishing coat for steps.

This contractor will furnish all necessary form work or will arrange with general contractor to furnish same for him and he will leave the above cement work free from stains, uniform in color and free from defects.

It will be noted by reference to drawings that porch floor slab except portion occurring over coal cellar and front terrace slab will occur directly on the ground.

CARPENTER WORK:

NOTE:

General contractor will make thorough inspection of pavements, streets curbing, etc., before the starting of work under this contract as general contractor must make good damage done by him or his sub-contractors to the above pavements, curbs, etc., before final acceptance of the buildings.

NOTE:

All finishing hardware will be installed by carpenters. All interior finish to be properly sandpapered and cleaned in addition to that done at the mill as same must be left in a perfect condition ready for painter. All frame lumber work not otherwise specified to be No. 1 hemlock, together with all other lumber perfectly sound and well seasoned. All exposed pine lumber to be clean and kiln dried lumber, same to be kept clean for finishing. Furnish all boards for pipes, doors, trim, etc., for tablet-boards, etc. Furnish all paper (good weight) required to cover finished floors, stairs, etc., to protect same from injury until owner takes possession.

JOIST, RAFTERS, ETC.:

All joist on first, second and third floors, ceiling joist and rafters to be of sizes marked on drawings and to be of No. 1 quality material. All joist to be of No. 1 quality long leaf yellow pine. Ceiling joist and rafters to be first quality hemlock. All above material to be of full sizes marked on drawings. Floor joist, rafters and ceiling joist shall be spaced 16" o. c. unless otherwise marked. Ceiling joist and rafters to be well braced and stiffened with 2x4's where necessary. All floor joist shall have cross bridging counting on one row every five feet or less with 1x3" stuff well nailed. All joist on first floor to be backed and sized to width. Joists that rest on plates, etc., are to extend 12" over same and shall be well spiked together.

Joist in second story bath rooms to have chamfered tops and to be prepared for tile floors counting on nailing 1x2" stuff at the sides of joist, then nailing 7/8" sub-flooring on top of strips so that the top of rough floors will be 3" below the top of joist.

All joist to run three abreast unless marked otherwise under all partitions that run parallel with same and

PENCIL POINTS

around all stairways. Joist shall be doubled around hearth and wherever else required.

All tail joist and trimmers to be framed in approved manner. Build trimmers for brick arches under all hearths.

General contractor will keep floor joist at kitchen, pantry and back stair hall at first story $\frac{1}{8}$ " above other first story floor joist to make up the difference between the single and double floors.

SPECIAL NOTE:

Furnish all rough hardware for the above building. Also furnish grounds for plastering at baseboard, at window and door openings, and wherever else required. (Note: Cast iron weights to be used throughout for double hung windows.)

STUDDING:

All studding to be $1\frac{7}{8}$ "x4", same to be spaced 16" on center. Trusses over door openings to be properly framed. Studding to be doubled around all door and window openings where required. Second floor studding will run down between joist and will rest on plates which will be on top of first floor studding. This same construction will apply at first floor. All above studding to be sound, straight and free from loose knots and to be dry lumber. Studding in partitions at soil lines to be increased accordingly. Care to be taken so that studding is so placed, especially at corners, so that all lath work will start and end on a solid foundation.

SHEATHING:

Entire main roofs, roofs and sides of gables and dormer windows, roofs of porches, decks, etc., to be sheathed with hemlock surfaced boards 1"x8" or wider, well nailed in place. Same to be sound lumber, No. 1 quality.

FRAMING:

All lintels over windows and doors to be of sizes as marked on drawings and to be well trussed and framed. The lintels to be 10" longer than the openings over which they occur. Extra care to be taken of the lintels over wide openings. All the above work to be in strict accordance with drawings and directions of architect.

Care to be taken so that the tops of joist will be at least 3" above top of all girders and where possible at "I" beams and that the strip that is nailed on side of girders and 2x4" stuff on "I" beams come up to underside of joist. See details.

CORNICE, CORNICE MOULDINGS, ETC.:

All cornice, cornice mouldings, brackets, etc., at main cornice, gables, dormer windows, side and rear porches, breakfast room bay and wherever else noted on drawings to be made up per details, counting on $\frac{7}{8}$ " material for plain work and not over $1\frac{7}{8}$ " for moulding work. Soffits to be $\frac{7}{8}$ " thick and where practicable of one width. Cornices will be provided with bed mould, frieze, etc., as shown. This contractor to include soffits and inside frieze, angle moulds, etc., at side and kitchen porches. Porch plates will be built of 2" material as shown on drawings, all to be well blocked and framed. This contractor will count on No. 1 white pine material of good length.

PORCHES, ENTRANCE HOOD, ETC.:

Hood over front entrance is circular in design and consists of circular cornice, frieze and architrave forming the entablature. The hood to be supported on cut brackets as shown. The soffit of hood will be lined with double beaded $\frac{3}{4}$ " yellow pine, tongued and grooved, material running from building out. The above hood to be in accordance with drawings and full size details and erected in a substantial manner. Brackets to be of sizes shown and per details.

Side entrance porch will have ceiling of double beaded yellow pine $\frac{3}{4}$ ", tongued and grooved, material with angle mould at intersection of walls and ceiling.

Kitchen porch ceiling will be similar to the above. At kitchen porch this contractor will include cornice and beams as above specified under heading of Cornice, square column with moulded cap and base, balustrade, frame

steps, lattice work, newel posts, etc., as shown. Floor at kitchen porch to be white pine or cypress, 2" on face, tongued and grooved, laid with white lead at joints said white lead being furnished this contractor by painter. Porch flooring to have nosing around outer edge with bed mould under same. Above frame steps to be well framed together and to have $1\frac{1}{8}$ " treads with moulded nosing and mould underneath. Risers to be $\frac{7}{8}$ ". Count on $\frac{7}{8}$ " thickness for the material at kitchen porch. Handrail and bottom rail and balusters to be of stock pattern but similar to that shown.

TRELLIS WORK:

This contractor will furnish trellis work where shown on elevations including fan shape trellis at chimney breast shown on side elevations. Trellis work around windows to be made up of $1\frac{1}{2}$ "x $\frac{7}{8}$ " material coped together at joints and shall be fastened to building with screws including metal washers or pipe cuttings which will be placed between trellis and brick work so that trellis will stand free from face of wall $\frac{3}{4}$ ". Said trellises to be screwed on brick work at short intervals so that firm installation is obtained. Fan shape trellis to be bolted at base and to be provided with 2x2 locust peg 2'-0" long that will be sunk in the ground as this fan shape trellis stands free from building. Above will be clearly shown on details. All above trellis material to be No. 1 grade white pine.

FLOWER BOX AND BRACKETS SUPPORTING SAME:

Flower box at dining room window and brackets supporting same will be made up of design shown on drawings, counting on $\frac{7}{8}$ " material for flower box and cut brackets of sizes shown. Flower box will be lined by sheet metal contractor including falling bottom and drain outlets. The above material to be white pine and as above stated in accordance with drawings and details. Flower boxes at entrance porch are not in this contract.

CELLAR WINDOW FRAMES:

All one light window frames in cellar to be solid frames made of $1\frac{3}{4}$ " clear white pine with mouldings on the outside. Said frames to be rabbeted for hinged sash, and to have sills $1\frac{3}{8}$ " thick also moulded sash $1\frac{3}{8}$ " thick which will be provided with wood muntins where shown on drawings. Said sash to be hung on butts and secured with strong bolts.

DOUBLE HUNG WINDOW FRAMES:

Double hung window frames will be built as per elevations and details. The pulley stile to be $1\frac{1}{8}$ " thick, and to be yellow pine; balance of frames to be $\frac{7}{8}$ " thick and to be white pine framed together per full size details. Outside mould to be $1\frac{3}{4}$ " thick and to be white pine. The frames are to be provided with $\frac{1}{4}$ " parting strips in boxes to separate weights. The sills to be $1\frac{3}{8}$ " thick and to be white pine.

CASEMENT WINDOW FRAMES:

Casement window frames will be built with $1\frac{3}{4}$ " frames moulded on the outside, double rabbeted for hinged sash and where shown to be provided with mullions, transom bars, etc., per drawings and details. Sash to be $1\frac{3}{8}$ " thick and sills to be $1\frac{3}{8}$ " thick. All to be white pine. Moulded drips to be provided on all sash and the above work to be in accordance with drawings and full size details.

DORMER WINDOW FRAMES:

Dormer window frames and sash to be similar to specifications for double hung and casement windows and constructed in accordance with drawings and full size details.

FLOORS:

Kitchen porch floor is specified with porches.

All rooms, halls and closets at first story, excepting kitchen, pantry and backstair hall, and the entire second story excepting bath rooms and back stair hall shall be laid with 6" or wider surfaced sheathing boards well nailed in place which will act as a sub-floor for $\frac{5}{8}$ " hardwood floor.

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Flooring at kitchen, pantry and back stair hall at first and second stories shall be No. 1 grade long leaf yellow pine flooring, tongued and grooved $2\frac{1}{4}$ " on face, $\frac{7}{8}$ " thick, secretly nailed, planned at joints and left in smooth and clean condition at completion of building.

All flooring to be of good lengths.

Flooring for attic to be No. 1 grade yellow pine flooring, $2\frac{1}{4}$ " on face, tongued and grooved, secretly nailed with all bad knots cut out. No dressing will be required at attic floors.

Where tile floors occur at bath rooms nail 1×3 " strips on the side of joist and put false flooring in between joist keeping same 3" below top of joist. The top of joist to be chamfered.

$\frac{7}{8}$ " flooring will be let under a separate contract.

MINERAL WOOL:

General contractor will figure on 3" thickness of mineral wool in between floor joist where floor is exposed at entrance porch.

DOOR FRAMES:

All outside door frames to be constructed out of $1\frac{3}{4}$ " material, moulded on the outside with rabbet cut in the solid. Refrigerator door frame to be made out of $1\frac{3}{8}$ " material with rabbet cut in the solid. All frames to be of necessary width.

DOOR JAMBS:

All interior door jambs to be made out of $1\frac{3}{8}$ " material with $\frac{3}{8}$ " moulded rabbet of necessary width.

DOORS:

Main entrance door, doors from living room to side porch and front terrace, dining room to side porch, outside kitchen door and rear entrance door shall be of designs shown and shall be 2" thick excepting the kitchen and rear entrance doors which will be $1\frac{3}{4}$ " thick. Said doors to be provided with panels, wood muntins, etc., per drawings and full size details.

All doors on first and second floors to be $1\frac{3}{4}$ " thick.

All attic doors to be $1\frac{3}{8}$ " thick.

All interior doors on first and second floors shall be the M— D— as manufactured by the P— L— Company represented in the P— District by the P— Door & Sash Company. Where solid panelled doors occur use No. 700. Where glass panelled small light doors occur use No. 705. The small lights to be divided per architect's drawings. Where special sizes are found for doors requiring doors to be built special they shall be of same design and construction as above mentioned doors.

All attic and interior cellar doors to be 5-cross panel stock pattern doors.

All doors to be of woods called for under heading of "Kinds of Woods To Be Used Throughout Building".

Closet doors to be of same woods on both sides regardless of the woods used in closets.

Include $\frac{7}{8}$ " panelled doors at clothes chute, at pipe pockets, etc.

Outside icing door for refrigerator to be a double baton door with paper in between and stile around entire outer edge the thickness of the double baton panel.

THRESHOLDS:

Thresholds to occur at all outside doors, between bath rooms and hall, servants' entrance hall and main halls and allow three extra ones to be located later.

MAIN STAIRWAY:

Build stairs as shown. Horses to be 2×10 ", counting on two for each flight, well braced where possible. Risers to be $\frac{7}{8}$ " thick and treads to be $1\frac{1}{8}$ " thick. The treads to have moulded nosings and moulds under same. Treads and risers to be well plowed and glued together and housed into wall string which will be similar to baseboard. As indicated on the drawings, face strings will be open and will have balusters running down into treads

where they will be dove-tailed into same. Handrails to be moulded $3" \times 4"$.

Where balusters occur they will be $\frac{7}{8}" \times \frac{7}{8}"$ square, and spaced as shown. Newel posts to be of designs shown and to be panelled and shall have moulded base, cap and ornamental drops. Handrails where shown, to have casements, goose necks, etc. Where possible the treads for the above stairway shall be of one width.

Side of stairway back to hall shall consist of panelling counting on three-ply veneer panels of designs shown, $\frac{7}{8}"$ stiles, mouldings around panels, all of which shall be well blocked, glued and clamped together and left ready for painter.

This contractor will include strings, soffit moulds, etc., completing the main stairway as shown on the drawings, complete in all respects.

Stairway will be built with red birch treads, wall strings, handrails, and newel posts.

Balance of the work will be poplar.

Where door occurs under stairway same will be furnished by door contractor.

All the above work as above stated shall be figured according to design shown on drawings. The work shall be well glued and blocked together and left in a finished condition.

SERVANTS' STAIRS:

Servants' stairs, including stairs from first floor to cellar and from first floor to third floor, to have 2×10 " horses and 2×6 " for platform. Treads to be $1\frac{1}{8}"$. Risers to be $\frac{7}{8}"$, newel posts where required to be 4" square. Handrails to be 3×3 " moulded. No casements or goose necks to be considered for these stairs. Wall string for the above stairs to be moulded the same as base.

Above servants' stairs will be built of No. 1 quality yellow pine.

INTERIOR FINISH OF DOORS, WINDOWS, ETC.:

Finish of doors, windows, etc., to consist of moulded architraves $3\frac{3}{4}"$ wide and $\frac{7}{8}"$ thick, mitered at upper corners. Architraves at windows to run down and rest on moulded sills $1\frac{1}{8}"$ thick with moulded apron and mould under sill. Finish of doors to rest on 6" plinth blocks. Base to be 6" high which includes separate cap mould. Base will be $\frac{7}{8}"$ thick. Provide cove floor mould at floor. Said cove moulds shall not be put down in rooms at first and second stories until after floors are finished and hardwood floors are laid. Include $1\frac{3}{8}" \times 1\frac{1}{8}"$ moulded back bands for finish at second story bath rooms and at main entrance door trim.

KINDS OF WOODS TO BE USED THROUGHOUT BUILDING:

Living room to be finished in poplar enameled ivory, excepting floor moulds, window sills and doors which shall be birch.

Doors opening to the outside will be white pine doors veneered with birch on the inside.

Dining room to be finished in poplar enameled ivory, excepting window sills and floor moulds, which will be birch.

Main hall and stairway to be finished in poplar which will be enameled white excepting window sills, baseboard, floor moulds, treads, handrails, and newel posts which will be birch stained mahogany.

All second story bed rooms and bath rooms to be poplar enameled various tints, excepting doors, window sills and floor moulds which will be birch.

Den to be finished in cypress which will be burnt with plumber's torch, then scraped and stained per painting specification.

Kitchen, pantry and cold room to be finished in Georgia yellow pine natural finish.

Attic and entire back stairway to be finished in Georgia yellow pine which will be stained.

Breakfast room to be finished in poplar which will be painted in colors.

Basement to be finished in white pine which will be painted.

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BOOKCASES, MANTELS AND SEAT:

Living room mantel to be built of design shown and per full size details. Same consists of moulded mantel shelf supported on moulded brackets, moulded frame around stucco facing, return jambs at either side of mantel, plinth blocks, etc. The above material to be well blocked and glued and the mould around stucco facing to be loose so same can be installed permanently after stucco facing is applied. This contractor to include one heavy coat of oil paint on the back of mantel at the mill.

Bookcases to be built where shown per drawings and full size details. Count on $\frac{7}{8}$ " tops with moulded edge and bed mould under same. Plain stile work to be made out of $\frac{7}{8}$ " material. Lower part of bookcases to be the continuation of base as shown on drawings. Doors to be $\frac{7}{8}$ " thick with loose wood moulds provided which will be set in place after glass is set. Count on $\frac{7}{8}$ " shelves with moulded front edge and include metal pins as the shelves must be adjustable. Above cases to be lined with $8 \times \frac{3}{4}$ " material with $\frac{1}{4} \times 2$ " strips to overlap the joints. The above work to be constructed in a first class manner, to be well blocked and glued where necessary and to be of designs shown and per full size details.

Seat to be built between bookcases at den as shown on drawings and shall consist of a moulded seat top with bed mould and apron under same. The seat to be provided with soffit ready for galvanized iron lining which will be put in by heating contractor. The seat to be supported on turned balusters with square tops. Space between seat, top and window sill will be panelled as shown counting on three-ply veneer panelling and $\frac{7}{8}$ " stiles. This panelled back to receive a coat of oil paint at the mill.

Mantel at den will consist of a moulded shelf, blocked and glued with moulding around mantel above shelf. Mantel will also be provided with moulded architrave around tile opening, $\frac{7}{8}$ " stiles with returns, plinth blocks, etc., as shown. The above mantel to be well blocked and glued and to be in accordance with drawings and full size details and shall receive one coat of oil paint on the back at the mill.

(To Be Continued)

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Armstrong's Linoleum Floors.—Portfolio of specifications, detail drawings, color plates and full information properly presented covering the subject. A. I. A. Classification 28 il. $8\frac{1}{2} \times 11$ in. Loose-leaf with heavy portfolio cover. Armstrong Cork Co., Lancaster, Pa.

Published by the same firm "The Story of Linoleum" and "Detailed Directions for Laying and Caring for Linoleum" Two extremely interesting illustrated booklets.

Pumping Bulletin.—An attractive loose-leaf binder containing specifications, drawings, tables of sizes and capacities of various types of centrifugal pumps for use in buildings. A valuable handbook on the subject. $8\frac{1}{2} \times 11$ in. 60 pp. Chicago Pump Co., 2320 Wolfram St., Chicago, Ill.

Marble Portfolio.—Loose-leaf portfolio showing forty different varieties of marble in their natural colors. Color plates 6×8 in. A copy of this portfolio handsomely bound in leather will be sent only to architects applying for it on their letterhead. Tompkins Kiel Marble Co., 505 Fifth Ave., New York City.

Zinc Roofing (Spouting).—Booklets and Specifications concerning Zinc Spouting and Horse Head Standing Seam Zinc Roofing. Published by The New Jersey Zinc Co., 160 Front St., New York.

Painting Specifications.—Specifications covering new and old work; exterior and interior work; plaster and cement surfaces; cement or concrete floors. Published by The New Jersey Zinc Co., 160 Front Street, New York.

Book of Fireplaces.—Illustrated booklet. 16 pp. Large detail sheet showing various types of modern fireplaces. Donley Bros. Co., Cleveland, Ohio.

Elevator Door Closer and Roller Bearing Hanger.—Technical bulletin illustrating and describing the devices indicated. Sectional drawings, diagrams showing methods of operation, etc. 24 pp. $8\frac{1}{2} \times 11$ in. Elevator Supplies Co., Hoboken, N. J.

Building for Comfort and Economy.—Booklet showing proper construction with reference to insulation against heat, cold and sound. Complete specifications for one- and two-story house. Samples of Flaxlinum. Flaxlinum Insulating Co., St. Paul, Minn.

Published by the same firm "Comfort and Economy with Stucco," covering entire subject of stucco construction with samples.

Spiral Fire Escape.—Detail sheet showing construction of this type of fire escape suitable for schools, institutions and various types of buildings housing large numbers of people. The Dow Co., Louisville, Ky.

The Kozy-Kitch Kitchenet.—Booklet showing improved type of refrigerator and kitchen cabinet combined, suitable for many kinds of residences and apartments. Sections, dimensions and full information. La Grange Fixture Corporation, La Grange, Indiana.

Architectural Uses for Wood.—Series of nine booklets, handy pocket size, covering in an attractive manner, various phases of the subject. Southern Pine Assn., New Orleans, La.

"Expansion" Metal Trim.—Four-page detail sheet showing application of metal trim for buildings of various types. Milwaukee Corrugating Co., Milwaukee, Wis.

Hollow Tile Construction.—Bulletin No. 174 containing over 30 pages of building details showing application of hollow tile in floors, walls and partitions. Extremely valuable book for architects, draftsmen and builders. 32 pp. $8\frac{1}{2} \times 11$ in. National Fire Proofing Co., Fulton Bldg., Pittsburgh, Pa.

Sheet Metal Building Specialties.—Catalog showing complete line of range boilers, pantry sinks, drain boards, gasoline storage tanks, etc., 32 pp. $5\frac{1}{2} \times 8\frac{1}{2}$ in. John Trager Steam Copper Works, 447 W. 26th St., New York.

Weisteel Compartments.—Catalog No. 11 describing compartments of all types. Blue prints showing construction and method of erection. Specification, including hardware. A useful book to all in any way interested in industrial buildings, public buildings, schools, hospitals, etc., 32 pp. $8\frac{1}{2} \times 11$ in. Henry Weis Mfg. Co., Atchison, Kan.

Hot Process Water Softener.—Booklet describing chemistry of water softening as well as equipment and services. Graver Corp., East Chicago, Ind.

Everson Filters.—Bulletin 501, correct filing size. Eight pages, giving full information regarding Everson non-clog filter. Made in all sizes for various types of buildings. Everson Filter Co., 70 W. Lake St., Chicago, Ill.

Metal Shelving and Racks.—Illustrated booklet showing full line of metal shelving, racks, lockers, sanitary drinking fountains and other metal specialties. Manufacturers Equipment & Engineering Co., Framingham, Mass.

Cypress Pocket Library.—Convenient library covering more than thirty different subjects. Some of the titles are Bungalows, New Insides for Old Houses, Exterior Trim, Barns, Sun Parlors, etc. A very valuable library for any architect and draftsman. Apply to Southern Cypress Mfrs. Ass'n., New Orleans, La.

Hotel, Club and Institution Installations.—Attractive illustrated booklet devoted to the complete furnishing of hotels, clubs and similar buildings. Many full page engravings. 6×9 in. 32 pp. Albert Pick & Co., 208 W. Randolph St., Chicago, Ill.

Published by the same firm, "School Cafeterias" covering subject of cafeteria planning and equipment and "Kitchens" a practical book dealing with the layout and complete equipment of various types of kitchens.

The Control of Lighting in Theatres.—Attractive booklet illustrated in color covering modern theatre lighting. Specifications, tables and much useful engineering data. 32 pp. $8\frac{1}{2} \times 11$ in. Frank Adam Electric Co., St. Louis, Mo.

Also published by the same firm Bulletin No. 29 describing full line of standardized panel boards. 16 pp. $8\frac{1}{2} \times 11$.

Slate—Consider Its Uses.—Attractive booklet showing the many architectural uses for slate. Roofs, walks, floors and many special uses are attractively set forth. 32 pp. National Slate Association, 767 Drexel Bldg., Philadelphia, Pa.

Six Quick Steps.—Attractive eight-page data sheet with blue prints and specifications showing installation of wood floors over concrete. All details carefully worked out for the drafting room. The Fireproof Products Co., 257 East 133rd St., New York.

QUALIFYING FOR REGISTRATION

BY EDWARD STOTZ.

Mr. Stotz recently delivered the address printed below. Believing that the message it contains is highly important we obtained Mr. Stotz's permission to publish the address in this journal, in order that it might be given the widest possible circulation among the men who can derive help and inspiration from it. Mr. Stotz speaks out of the fund of experience he has gained in his important work in connection with the registration of Architects in the State of Pennsylvania, as well as from his experience as an architect.—ED.

THE ultimate goal of the architectural student is independent practice. Many of the states now have, and the remainder will have, registration or licensing boards, before whom it will be necessary to appear for an examination of some character, in order to be permitted to use the title "architect."

As I have some knowledge of the operation of the "Act" in the Commonwealth of Pennsylvania, I felt it a matter of duty to accept your invitation and endeavor to set forth some points of qualification for your consideration, which may possibly be helpful to at least a few.

So many papers are prepared that seem to deal with such simple and obvious facts, that it makes one feel as though it were merely a pawing of the air or a determined effort to further deplete the fast vanishing supply of print paper to contribute more, and while I shall only be able to advise you of what you are already aware, yet the manner of presentation may cause sufficient local irritation for a time to keep you from neglecting to use your perhaps too obvious knowledge, which has to do with that great event, "Opening an Office of Your Own."

The casual and unbidden convictions that impress one amid the hurry of the daily routine, or in those treasured periods of quiet study are the indexes to what we are and shall become, and as from time to time you feel a sense of duty well done or of an opportunity passed up, the degree of complacency, in either case, will surely leave its mark and affect your career. You will find the study of men and affairs creeping into your life, and will be required to relate your work to the views of those who see results with a vision that, distorted as it may seem to you, is stern reality to those whom you are anxious to serve.

To keep the balance that requires your feet to be firmly planted on the ground while your aspirations rise among the silvery clouds will oftentimes be a Herculean task for which you should begin fitting yourself as soon as possible.

The habit of thinking of your work rather than yourself and of excluding the delusions of Fame and Wealth from the active imagination is productive of good results. These are not *goals*, but *results* of honest effort and they are like barnacles that attach themselves to solid breakwaters under favorable conditions of time and tide and *not* to shifting sands.

Despite whatever skill, taste or constructive sense you may be endowed with, if you disregard the exercise of that clean, honest courage that goes to make up a man fitted to deal with complex prob-

lems such as will confront you, the courage that will enable you to secure and maintain the trust and confidence of your client, the contractor and the artisan, your work will lose much of its value.

To client and contractor alike, you are a force of some kind and you will either register a negative impression that will later send you afield for new opportunity or you will establish that much more desirable situation of the client coming back with confidence and the contractor proving glad to do another job, being sure of two equally important things, namely, that he will be compelled to execute his contract faithfully and will receive prompt and courteous treatment, also that he will not be made the subject of your whims or penalized for your errors.

To your brothers in the profession show forbearance and courtesy and adhere to the most comprehensive Code of Ethics ever given to man and to which all the words in the language cannot add—"Do unto others as you would that they should do unto you."

For those who think little, act quickly in their own interest and are continually beset by doubts as to just what is right and what is wrong, when they feel that they really need the money, the Code of Ethics of the A. I. A. is a safe guide and they should commit it to memory, as every phase of avoidance of possible wrongdoing is there fully set forth, so that the most obtuse may know what is "*verboden*."

I mean no disrespect to the Code of Ethics. I subscribe to it, but deplore the seeming necessity for its existence when we have had so much more beautiful and comprehensive a one for so long a time.

You wonder perhaps what all this sermonizing has to do with registration for practice; to me, it is fundamental.

"The applicant shall be of good moral character," a moth eaten phrase in print, but the foundation of success in the final analysis.

The graduate of an accredited school of architecture is required to show proof of three years actual employment in a reputable architectural office. The presumption is that the school experience has inculcated a knowledge of the fundamentals of both design and construction, although its application in reality is practically nil. The office experience is calculated to pick up the thread where the school dropped it, at least you are so inclined to think until you leave one to enter the other, when you find that a gulf sometimes exists. This gulf is a mark of the assininity of those who do not believe that theory and practice are interwoven, but have a

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distinct line of cleavage—a fallacy which unprejudiced contact is slowly clearing away.

The initial years in an office are of vital importance to the student, and fortunate is the young man whose environment is such as to give him the opportunity to bring his fresh imagination and high hopes from the school to the office and find there a sympathetic attitude, and to be himself open minded and willing to recognize that a ladder has rungs at the bottom as well as the top, that achievement is not a series of "stunts," and that "getting away with it" is the mother of later misfortune.

I am inclined to think that the schools do not indicate clearly to the graduate what will be required of him, with respect to the cold world in general or the registration in particular.

The system that not only advises, but definitely requires actual working in an office during vacation periods and visits of students to buildings under course of construction, is of great value if approached by the student in a frame of mind conducive to trying to give, as well as to get.

Should a man enter a large office where the various subdivisions of the work are segregated, and prove himself of value in design, and feel that it is by this means alone that he shall enter the "Hall of Fame," the average result at the end of three years will be, that having progressed in one direction, he has actually retrograded in others. What is still worse he has, perhaps, even lost sight of the theoretical value of such prosy things as loads, stresses, weights and values of materials.

He begins with the inscribing of a sign language, pleasing to the eye, but most of which he cannot decode.

With an engineer in the next room, a practical "grubber" on the other side of the office who patches things together, and a specification writer to make all ship shape, our prospective architect has become truly a skin specialist and again more woe!—he is proud of it, believing that he can later "buy" on the "Big Business" idea, what he is either too indolent or thoughtless to acquire.

He intends embarking with several partners, one of whom is a "shark" on construction, the other a business man, and by this balanced organization achieve success.

I do not assert that this obtains generally, but there is a tendency in that direction and it is the "few" to whom these words may be helpful.

The desire of young men to gratify their vanity by being connected at once with a large, well known organization—whose force is split into controllable units for expeditious handling of the work—results in a conscious or unconscious, but nevertheless actual exploitation of the outstanding and best developed characteristics of the young man. In most cases he develops into a decidedly lopsided state, unfit to assume the exacting and manifold duties which he must take up in independent practice, unless by great effort and sacrifice he has preserved his equilibrium by seeking the other line of development outside of office hours.

It is true that through association these conditions can in a large measure be overcome, and it

would be certainly a distinct loss to attempt to make a second rate constructor out of a gifted designer, or the reverse. It is equally true, however, that no man should neglect any phase of his development which is a vitally necessary part of the service which he engages to perform for his clients.

The law in Pennsylvania deals with an individual and not with firms or associations; every man stands upon his own personal qualifications and knowledge, not upon the qualifications of those whom he may readily hire or associate with himself. The answer, "I knew that in school," or "Our office always has an engineer figure everything," will not satisfy an honest board that a man should, under the seal of the state, proclaim his unlimited right to the use of a title which implies that he is capable of actually designing, describing and superintending the construction of any building that he may be intrusted with, including the knowledge that will enable him to protect his client from loss and his buildings from condemnation by failure to observe the requirements of the law and ordinances of his community.

The public takes registration seriously and will continue to do so and they have a right to be protected against the possible employment of a man who not only does not know, but thinks it an imposition to ever be expected to know the elements of the science of safe building.

It is an unfortunate delusion to suppose that registration is a "joke."

It is to be deplored and may not be avoided or denied that many old practitioners must be admitted under other provisions of the Act, where their attainments are not what they should be, but these are of long standing, their status is clearly fixed, but they shall pass on.

You younger men should welcome the attempt to raise the standard of requirements for the practice of your chosen profession, than which, if faithfully carried on, none is more exacting or requires so many sided a development.

The continuous growth and development that the earnest lover of his work may enjoy is never ending. The law of compensation works here as elsewhere and should you elect to despise the little things of practical and constructive value, they will repay you in your own coin, as surely as an unstudied line in your façade will annoy you in the future, when your growing taste shall have caused you to exhibit that healthful sign of regret and the determination to avoid the same error in the future.

However, for every non-technical critic of the skin of your building, you will have a dozen critics of its anatomy. The average mortal does not enjoy a leaky roof, a shaky floor, a cracked wall, a chimney with a down draft and the feeling that the mortgage will outlast the house, despite all the evidence of your best art and skill upon the surface.

How, then, shall you cultivate that constructive sense and learn all the little things that go to round you out so that you may be useful and safe as well as a dispenser of beauty in mass and detail.

(Continued on page 62)

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*Ten-minute Life Study in White Chalk on Black Paper by Miss Elizabeth Whittingham,
Winner of Scholarship Prize for First Year Life Drawing at New York School of
Applied Design for Women.*

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THE AMERICAN ACADEMY IN ROME

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Frank P. Fairbanks, Professor in Charge, School of Fine Arts, we quote the following items of news:

"The month of May has been distinguished for an almost complete absence from Rome of the Fine Arts students. At one time or another all but three of our twelve men have travelled. The Orient and Greece have been the objectives of five of the men while northern Italy has beckoned the others.

"The cessation of students' activity in both schools has worked in very conveniently for the resident faculty and permitted them to take a deep breath before submerging under the details of the spring exhibition.

"The principal activity in the School of Fine Arts has very naturally fallen on the Department of Music which has the fine opportunity of bringing a work of Leo Sowerby before the Italian public. Sowerby's Ballad for two pianos and orchestra was rendered to a large, distinguished and cordial audience at the Augusteo. For the concert Col. and Mrs. McClellan and Their Excellencies The Ambassador and Mrs. Child were the guests of Director Stevens. Albert Coates, who conducted the interpretation of the Ballad and has been a guest of Prof. Lamond during his stay in Rome, promises to be a very important factor in the activities of our Musical Department for he has taken upon himself the task of presenting the first performance of Hanson's next Symphony "North and West," which is to be given in London and Rome next season. Coates will also undertake the rendering of the first work that Thompson completes.

"Prof. Manship has gone to Paris and will later go to London to execute some portraits in Sargent's studio.

"Prof. Faulkner is spending a few days taking the Manship car back to France and has taken Griswold with him for company.

"The University of Cincinnati is to acquire the copy of the model of St. Peter's dome by our second year architect Hafner, and has already sent us the funds for its execution.

"Stevens and Flögel, first year sculptor and painter respectively, have just returned from their travels and are full of enthusiasm for what they saw in Egypt and Greece. Both men are recasting their first year work in consequence and we look for some promising results."

THE ARCHITECTS' DANCE AT UNIVERSITY OF MICHIGAN

THE Architects' Dance, started four years ago, has become one of the chief social events of the season and in decorative setting easily takes the lead. The latter is due to the handling of the entire decorative scheme by the students who do it as a problem in design. The design is selected on the basis of competition and is then carried out by various groups in order to distribute the work without undue interference with regular class work. This dance is the chief "outside activity" of the year for architectural students.

The background of the party this year will reflect the interest taken in Egyptian exploration and will be more ambitious than any thus far attempted. Egyptian art is full of material peculiarly appropriate for a decorative scheme for an architectural, or, for that matter, any other dance. From this rich store the students have adapted compositions showing the arts of Egypt, particularly building, sculpture, and painting. In the broad frieze running around the gymnasium will appear various steps in the making of brick up to its laying in the wall, the finishing of a sphinx by sculptors, the making and painting of pottery and terra cotta; metal workers and other craftsmen are shown at work, some of them still doing much the same as they are in building and associated crafts today.

There are Egyptian musicians with the harps of the Nile singing the praises of art, and Egyptian goddesses pointing in pride to the tomb of Ti, the famous Egyptian architect whose mastaba or tomb stood near the pyramid of his ruler.

There is also a lighter side. In one panel a large Egyptian boat sweeps along under full sail with the Temple of Art as its cargo, on its sail as an escutcheon the symbol of hope. Art's argosy here sweeps surely forward despite the rocks and hills beyond. In another panel the Pharaoh, mounted in his chariot, is attacking a fortress before which many have fallen and over which appears a dome reminiscent of State capitols. In another panel two winged goddesses point to a stone bearing a bilingual inscription. The character and arrangement of the writing is quite in Egyptian manner, and the meaning can be made out by the initiates. Another panel of peculiar interest is one in which the Sphinx towers high above the horizon and distant pyramids. Between her great paws rises the building of the Mother Art and about her are multitudes in an attitude of supplication before the great mystery of the Unknown.

Around and over this frieze is a wealth of color studied from Egyptian documents in the Architectural and General Library.

Ann Arbor will thus have an opportunity to gain a hint of the richness of Egyptian decoration. The effect promises to be one of extraordinary interest and beauty.



*Egyptian Setting for Architects' Dance
at the University of Michigan*

PENCIL POINTS



PERRY COKE SMITH

PERRY COKE SMITH, who has been awarded the McKim Fellowship in Architecture, was born in Lynchburg, Va., in 1899, and is a son of Bishop H. Coke Smith.

Mr. Smith entered Newberry College, Newberry, S. C., as a Sophomore in Engineering in 1914. He left in 1916 to study Chemical Engineering at the University of Wisconsin and went through Junior year there 1916-17. He enlisted in the Army in October, 1917, and served fourteen months in France with the 1st Gas Regiment, Chemical Warfare Service. Mr. Smith received the Croix de Guerre. He taught mechanical drawing in John Marshal High School, Richmond, Va., in 1919.

Mr. Smith entered the office of Wickham C. Taylor, Architect, Norfolk, Va., the same year and worked five months tracing. This was his first contact with architecture. From then to the fall of 1920 he superintended buildings for private builders in Norfolk, Va.

He entered as a freshman in architecture at Columbia University in the fall of 1920 and graduated in June, 1923. For the past year he has been assistant instructor in Elements of Architecture (Orders), Freehand Drawing, Mechanical Equipment of Building, Building Materials and Construction and Architectural Engineering in University Extension at Columbia. He has done notable work in Beaux-Arts Institute of Design Problems,—won the Second Municipal Art Society Prize 1922—Second Warren Prize 1923—First Municipal Art Society Prize 1923, and the McKim Fellowship in Architecture 1923.

Some of Mr. Smith's sketches of pre-revolutionary houses were published in "Country Life" for April, last.

Mr. Smith feels that he owes much to F. C. Hirons, H. W. Corbett and Maurice Prévôt, critics at Columbia University.

Mr. Smith is now connected with the City Planning Commission, which is making studies for the replanning of New York City.

SAN FRANCISCO ARCHITECTURAL CLUB

THE winner of the Paris Prize Competition in 1919, Ernest Weihe, has returned to San Francisco after an absence of three years spent in study at Paris, in Italy, and in other countries of Europe. Upon his return he was welcomed at a banquet given by the Club in his honor on June 1st, at which a large number were present, and all proclaimed the event a decided success.

The regular monthly business meeting of the Club was held on June 6th. One of the outstanding features of this meeting was the interesting and instructive lecture given by Mr. Stockwell, Illuminating Engineer of the Pacific Gas & Electric Company, on the subject, "The Architect as an Illuminating Engineer." The strict attention given during his talk, and the interest manifested in the form of questions by which Mr. Stockwell was bombarded mercilessly for an hour thereafter, showed that his message had been brought home to the boys and that he had accomplished his first purpose, that of arousing their interest. He has offered his whole-hearted assistance to anyone desiring further information, and has also expressed his intention to mail printed matter on the subject to all club members.

The Pacific Sanitary Manufacturing Company has extended an invitation to the Club for its members to pay a visit to their manufacturing plants at Richmond and San Pablo, and the same has been gladly accepted as it should prove both instructive and entertaining. The date has been set for Saturday, June 30th when representatives of the company will conduct the members through their plants. Luncheon and refreshments will be served. The members will assemble at the Ferry Building in time to take the 8:40 A. M. Southern Pacific boat, from which time they will be in the keeping of the Pacific Sanitary Manufacturing Company which will see to it that all their wants are provided for until they are again released at the Embarcadero in the evening.

Nominations for Treasurer and two Directors were made at the last meeting. They were as follows: Treasurer, Lawrence Keyser; Directors, John B. McCool and William Rowe.

WORK OF PRATT INSTITUTE IN ARCHITECTURE RECOGNIZED BY REGENTS

A LETTER was recently received by Walter Scott Perry, Director of the School of Fine and Applied Arts of Pratt Institute, Brooklyn, New York City, from Augustus S. Downing, Assistant Commissioner and Director of Professional Education, State Department of Education, Albany, N. Y., advising him that the Board of Regents, at a meeting held May 5, 1923, formally registered the Department of Architecture of the School of Fine and Applied Arts, Pratt Institute, under Section 441 of Regents Rules. This is a recognition of the results obtained in the course of intensive training given by Pratt Institute.

ART EXHIBIT ON MILLION DOLLAR PIER

AN ART exhibition arranged by the Fellowship of the Pennsylvania Academy of Fine Arts was opened recently in the Temple of Art on the Million Dollar Pier at Atlantic City, N. J. A committee of local women, representing 6,000 clubwomen in Atlantic City, is actively interested, as it is the first move in their drive for a fund of \$50,000 to establish a woman's club in the city. Half of the proceeds of the affair will go to the clubhouse fund.

PENCIL POINTS

QUALIFYING FOR REGISTRATION.

(Continued from page 58)

Realize keenly your moral obligation to society, which is just being true to yourself and despise not the treasures of knowledge that the builder and superintendent have.

Because they discourse not in high sounding phrases of the atelier do not miss an opportunity to cultivate them.

Did you ever ask for a specification and spend on it some of your midnight oil and then slip around when chance presented and see those unprosaic words exemplified in the unfolding of concrete, steel and masonry and realize that the beauty of the finish would be but a sham, a stage prop, without the cunningly contrived construction that makes the beauty possible and ministers to the safety, health and welfare of all who live within the walls.

Should your tailor fail to know the value of the cloth he puts into your coat, use rotten thread and linings that rip and shrink, and you shortly found yourself in possession of an ill-fitting, faded rag, would you mention the matter to him? Certainly! and with a just sense of outrage!

A small building, a cottage, sometimes represents the united savings of a family for twenty years. They engage an architect. They know less of the real construction of a house than you do of a coat.

Should you not know enough about the bearing value of the soil, the proportioning of the footings, the tying together of the walls, the simple calculations whereby beams may be figured, the installation of a sanitary plumbing system, and the other essentials so as to honestly feel that it is your house, every bit of it? Should you not feel that your next commission will be the easier obtained as well as the more pleasurably and expeditiously performed, if you have truly rendered the full service which your title implies?

Should you not face the work with an inquiring mind and eager ear and an eye to serve truly, your art, your profession and your client, for this trinity is never dissolved?

The study and the attempt at specification writing should not be a piece of plagiarism, but done on the principle of amplifying your drawings by a simple, direct story, the meaning of which is clear to you, and in the telling of which words convey information more expeditiously than drawings. Secure a copy of all the Building Laws and other pertinent legislation and seek the reason for their existence.

You will, of course, find many of these regulations a vexation, but that will only increase your knowledge and perhaps some day you may secure that high distinction of being appointed a member of a "Commission to Revise the Building Code," then you will realize what you do not know and renew your youth in the search for knowledge, or perhaps resign.

These are things you should know, and you can know them. The literature of the day is available in such volume and so easily obtained that one is appalled by the mass of it. The simple engineering problems that are being published in our technical periodicals are of splendid value, and the application of construction knowledge is, after all, not complex if taken piece by piece. Should you find that you are unable to take any interest in the subject and that you believe that construction and design are things apart and that you shall always so regard them, my sincere advice is—quit!

In the great world outside there are many opportunities where your fancy may find outlet free from the oppression of the manifold complexities of construction and administration.

It is not supposed that you are to design the steel frame for a mammoth building or lay out in detail a complicated mechanical plant, but you must have an in-

telligent appreciation of its value, understand its functions in principle and be familiar enough with the technique of the several parts to be the resourceful guide who shall see that the right trails are followed and all converge to one point at the finish.

I believe one of the best tests is to try to make a complete section through every part of a building, vertical and horizontal, and also make sketches of buildings under course of construction, and then describe the materials and indicate why they were used. This backward motion of analysis will move you forward.

It is surprising what a number of things lurk within a wall. If you cannot put it together try to take it apart.

When one realizes the importance of a thing, it is usually attained, and I am sure that some systematic effort to get into sympathetic touch with the practical side of your office work, will unfold itself. By all means miss no opportunity to examine every piece of construction work you can find, and ask! ask! ask! for here is a realm of reality where theory, fads or fancies do not enter. So long as construction remains to you a mystery, so long will you be a lopsided pretender and the dupe of many a salesman who induces you to accept the wonderful "engineering" service of his company for some untried exploitation that will shortly be followed by a dozen more that come and go to trap the unthinking dreamer.

The study of design, after all, cannot be forced, it is a gradual growth in appreciation and culture that is not interfered with by other studies, and to use some of the precious time in thought and investigation should not harm the average aspirant who indeed might produce better work by more thought and less drawing.

In the selfish workaday world, none of us is free from error, a partially imaginary necessity drives us to that horrible efficiency which, if carried too far, will take all the joy out of life, leaving unbalanced entities, warped by over use of part of the faculties at the expense of the others.

It is the age of so-called specialists in our profession as well as in the practice of medicine. The rush of completion dates, the lack of time, the desire to do "Big Stuff" to meet exacting requirements of commercial work tend to make the men in an office cogs in a great machine, the intricacies of which they never comprehend and the prime mover of which is surrounded by mystery back of doors marked "Private."

Specialization in architecture is largely a matter of propaganda, a talking point, rarely producing work of increasing real value, and tending to commercialism, quantity production and rubber stamp results. Names that we revere come to mind, men who have left or are leaving their impress upon the art of the new world and how few there are that you think of as specialists even though, perforce, much of their work was in one line. You know them as architects, pure and simple.

There is, or may be, justification for some in later life to follow one phase of practice, but surely the young practitioner should not carry this tendency to the extreme of divorcing the elements upon which all structures are made safe and beautiful and feeling that to others may be delegated all these tasks, excepting that of dealing with surface effect. Tapestry is wonderful and its art is enhanced by the fact that it is a fabric with a structure that endures.

As I began, so shall I end—nothing has been stated that you do not know, but I hope that a few will be benefited by a searching for their old textbooks, by the revival of the thought that to have and to hold knowledge we must seek to use it and by the realization that as a study of anatomy is essential to the sculptor, so is a knowledge of construction necessary to the architect. The nation needs to be served from every standpoint and art is dignified when put in enduring and useful form. An intimate knowledge of construction cannot but strengthen the confidence and increase the skill of the designer.

PENCIL POINTS

THE MAKING OF WORKING DRAWINGS

(Continued from page 30)

information to be given. Metal window frames and sash are shown, the supporting lintels for the brick work are shown. Sections are taken, showing the relation of interior plaster to the window frames, etc. A drawing of this kind combines ornamental work with absolute practical conditions.

Figure 5 shows a full size detail of an ornamental stone panel. The motif selected to be executed is derived from a well-known architectural detail document.

When good architectural motifs and details are employed, and are used in a proper way and place, this is not a misuse, but a good use thereof, and is ever new. This drawing is an excellent example for the indication of ornament—again stone can be felt. From this drawing the modeler can well work and the motif will again live. It may be of interest to refer to page 25, Figure 2, of the May issue of PENCIL POINTS. The detail above mentioned is a development of the ornament indicated on one of the elevations and for which this detail was made.

Figure 6 shows part of a full size detail of a glass and iron building front. It may be said that this detailed sketch also served as a shop drawing and was made partly in conjunction with the contractor who was to execute the iron work.

A key drawing drawn to the scale of $\frac{1}{2}$ -in. to the foot was also made with this drawing, to be used as a shop layout. Upon drawings of this character, very little is left unsaid. In fact all the models and shop patterns for the execution of the work were directly taken from this detail. This also is a drawing where the ornamental treatment for design and purely practical parts are combined for the result as a whole.

The preparation of models, shop drawings and the general co-ordination of work will be taken up in a following issue of PENCIL POINTS.

In the proper study and analysis of one's work, thinking in a clear way, finding good in all work—perhaps (using the words of a friend), "We do not take possession of thoughts, but thoughts take possession of us." The influence of the masters is ever present.

HOTEL ARCHITECTURE FROM A HOTEL MAN'S VIEW POINT

(Continued from page 45)

room shall not have the appearance of a bedroom. The type of wall bed that swings into a closet in the day time solves this part of the problem and the provision of a dressing room and bathroom between the bedroom and the corridor, with an entry of ample size complete the layout. A portion of the plan of the second floor, upon which the sample rooms are located, in the Olympic Hotel, is shown on page 46. The sample rooms should be provided with a dado or base of wood extending from the floor to the height of a table or trunk, as this will prevent the scarring of walls during the moving of trunks or setting up and taking down of sample tables. The walls should be painted some quiet color that will not clash with any merchandise that may be shown, and at the same time this color should not be of a dull or muddy kind which is sometimes used when a "neutral" color is called for. It is not necessary to have either these dull uninteresting colors or the kind of wall treatment that I have seen in the sample rooms of many hotels that would make any line of merchandise unbearable when shown in conjunction with the crude coloring and the hideous pattern of the walls. A buff color that has a suggestion of sunshine yellow in it is a good color.

It is well to locate the sample rooms on one of the lower floors of the building. In the Olympic Hotel in Seattle, as has already been mentioned, they are on the second floor, in order to facilitate the handling of trunks

to and from the sample rooms by means of the freight elevators and to provide the best possible elevator service for the salesman's customers.

(To be Continued)

PERSONALS

R. BERNARD KURZON, Architect, has removed his offices to Suite 1210-30 North Dearborn Street, Chicago.

LANG, RAUGLAND & LEWIS, Architects and Engineers, have removed their offices to 412 Essex Building, Minneapolis, Minn.

YORK & SAWYER, Architects, have removed their offices to the Pershing Square Building, 100 East 42nd Street, New York.

RANDOLPH F. WARE, Architect, has removed his offices to 341 York St., Newport, Ky.

F. E. JOHNSON and GEORGE R. GRISWOLD have become associated for the practice of architecture under the firm name of JOHNSON & GRISWOLD, Architects and Engineers, Suite 31-39 Wisconsin Block, Superior, Wis.

I. ALBERT BAUM and A. B. BOYER have dissolved their partnership. Mr. Baum has opened a temporary office in the Columbia Mutual Tower, Memphis, and Mr. Boyer is continuing the practice of architecture in St. Louis.

NOTICE TO OWNERS OF "GOOD PRACTICE IN CONSTRUCTION" BY PHILIP G. KNOBLOCH

THE Hydrex Asphalt Products Corporation, of New York, calls our attention to the fact that "The Membrane Method" of Waterproofing is a registered trade-mark owned by them. The words "Membrane Waterproofing" are inadvertently used on plates 1, 2 and 29 of "Good Practice in Construction."

In all fairness to the Hydrex Asphalt Products Corporation we are glad to bring this matter to the attention of those who have purchased copies of Mr. Knobloch's book.

THE YEAR BOOK OF CARNEGIE INSTITUTE OF TECHNOLOGY

THE year book, entitled "Review of the Department of Architecture" just issued by the Architectural Society and the Scarab Fraternity at Carnegie Institute of Technology, Pittsburgh, was prepared almost entirely by students, and is an unusually attractive and interesting publication.

The volume is dedicated to Henry K. McGoodwin, the first head of the Department of Architecture, and who was recently appointed Chairman of the Faculty of the College of Fine Arts and Head of the Department of Architecture.

Most of the pages in the book are given over to reproductions of prize drawings and designs executed within the past few years by students in the department. Among the group are the prize drawings of Paul F. Simpson, winner this year of the LeBrun Travelling Scholarship; Otto M. Olsen, winner of the Stewardson Scholarship this year; Russell F. Simpson, winner of the Stewardson Scholarship in 1921; H. L. Rubin, who won the Stewardson Travelling Scholarship in 1916.

Perspectives; rendering in pencil, charcoal, crayon, pen-and-ink, water color; interior decoration, designing. Twenty years' experience. Emil Lowenstein, Room 1410, 25 West 43d Street, New York City. Tel. Vanderbilt, 8656.—*Adv.*

PENCIL POINTS

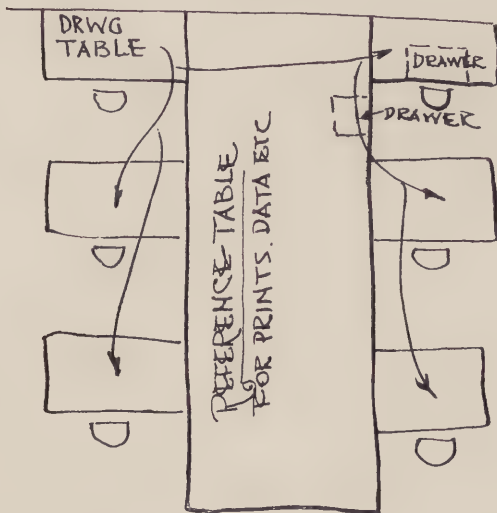
A LETTER ON DRAFTING

IN response to our request for time savers in the drafting room, we have received the following letter from Mr. R. B. Wills, Melrose Highlands, Mass.:

By far the greatest losses and the most exasperating delays are caused, not by the draftsmen but by the squad leaders or Architects as the case may be, who transmit the information to the men. All too often, they think it is up to them to impress the draftsmen with their importance rather than to carefully lay out the work so that each man knows ahead of time just what he is expected to do and in a general way how he is to do it. I talked with a draftsman a few days ago who has been working in a certain office for over a year and in that time has never been told even in a general way what was expected of him. He just drifted from one piece of work to another, doing what other men had left undone or in some cases doing what had already been done by others. More credit to him who got his head down on the table and worked than to the method of planning work in that office.

To get down to a few time saving ways.

- (1) Arrange drawing tables with reference table as shown below.
- (2) Use straight edges instead of T squares for horizontal lines.
- (3) Use so called automatic fillers to fill drawing pens.
- (4) Tie penwiper, sandpaper, and scratch pad on separate strings under the table where they can be found.
- (5) Keep drawing instruments clean and sharp. A drop of oil saves a lot of cussing.
- (6) Wash out your ink bottle once in a while. All the dirty ink bottles are not found in the Post Offices.
- (7) Get in the habit of dropping your tools in a certain spot on the table, where you can find them.
- (8) Don't be fussy. Determine the amount of accuracy required and gauge your work accordingly. Speed depends more on quick judgments and right methods than on gyrations of the pencil.
- (9) Do everything freehand that can be done neatly even unto crosshatching.
- (10) For fast slant lettering use Esterbrook 312 Judges Quill.
- (11) When penciling a drawing make it complete. Get in the habit of making quick legible notes on drawings. Draw all dot and dash lines in full. Put the dashes in when inking.



Suggested Arrangement of Drafting Room Tables



"After all the old pep is what gets the work out"

- (12) Have drawing approved in general by squad leader before inking.
- (13) "Group your inking."

We learned this in school but most of us have forgotten it.

- a. Work down across the drawing from left to right, this saves the smears.
- b. Ink circles and curves first.
- c. Then horizontal followed by vertical dimension lines.
- d. Then horizontal followed by vertical lines taking them by sizes, thinnest first, they dry quickest.
- e. Then lettering.

- (14) Here's a help when tracing a blueprint. Use the plate glass from the boss's desk as a table, the ends being supported on wooden horses. Place an electric light underneath. This sharpens up the lines of the blueprint wonderfully and makes the tracing comparatively simple.

- (15) In making perspectives. After determining the vanishing point, use railroad curves for converging lines.

CORRECTION

WE HAVE received the following letter from the National Terra Cotta Society:

"Will you be kind enough to publish the following correction of an unfortunate clerical error in the advertisement of this Society appearing in the June issue of your magazine whereby the Chapel of the Carmelite Convent, Santa Clara, California, was erroneously credited to Albert M. Cauldwell as Architect.

"Maginnis and Walsh, of Boston, are the Architects of the Carmelite Convent and the beautiful chapel featured in our advertisement.

"We deeply regret the circumstance which led to its authorship not being correctly credited. By giving this announcement every prominence that may be agreeable to you, we shall be greatly obliged."

JOHN E. RHODES.

THE death of John E. Rhodes, Secretary-Manager of The Southern Pine Association occurred Saturday, June 2, 1923. His loss is keenly felt by his former associates and many friends.



THE OTHER SIDE

ON THE editorial page of the June issue of this journal we printed, under the heading "WANTED," a letter we had received from a prominent architect, and commented upon the need for the qualities he called for in the man he was seeking to fill a position of importance in his drafting room, particularly the element of personality.

This aroused a great deal of interest among our readers and we have received letters from all parts of the country commenting upon this letter. The architect's letter stated *his* requirements, his side of the case. In reply a number of draftsmen have presented *their* views on the situation and stated their requirements—the other side.

As a matter of fact, the draftsman, as a rule, simply shares the fortunes of the architect. Uncertainty of employment is the lot of both in most cases, as is an inadequate income, considering the amount of preparatory training each undergoes. The general situation in the architectural profession can be improved only slowly, by constructive methods.

We believe that it will help towards improvement if both architects and draftsmen give open minded consideration to both sides of the question—for, after all, they are dependent upon each other.

From the letter of one draftsman we quote the following:

"The fictitious 'ad' and your comment on the first page of PENCIL POINTS for June naively assumes the omniscience of the architect-employer and gratuitously imposes on the architect-employee the burden of proof for 'common sense, level-headedness, experience and practicality.'

"Disregarding the contradiction that your correspondent could have become 'foremost' without the collaboration of such men as he says he is still looking for, I volunteer to tell your 'foremost architect' how to find his nonesuch. * * * From these is extracted for mere wages the products of creative efforts of a high order without warming them with a ray of the glory or fame in the results achieved.

"Sensitive, as artistic temperaments usually are, to the salve of approbation, they are expected to act the alter ego role with absolute self-effacement. Underlings at pay time, but lords during the sweat that changes an idea into a reality, their situation is an inconsistency. In most cases their position is

precarious, inasmuch as they are hired as 'supers'; and however meritorious their performance, every time the curtain rises they find themselves under new management.

"Now if we are going to profit by your intervention, please advise your correspondent to advertise not for a draftsman—that's too archaic—but for an associate,—or two, or three, if his 'foremost' is ample enough—to take care of his drafting room. Then even without mincing his requirements of 'engineer' and 'artist,' without which, by the way, no one could possibly have a 'thorough-going knowledge of building practise' he will get 'God-sends' galore. Many a new office will be glad to close down; many an old staff will disintegrate; and many a high salary will be willing to shrink for the opportunity of expanding one's ego and manifesting that power latent in every worthy architect-employee, the 'element of personality in its true proportion.'"

The writer of the above letter also expresses the conviction that a man who checks over the work of others in the way required is almost certain to have the dislike of the men whose work he criticises. In this connection it is interesting to read a letter from another draftsman who so greatly admires and likes the man who checks his work and the work of the other draftsmen in his office that he has written to us asking that we bring this man to the notice of the architect who has this position open. This is still another side and we print extracts from this letter below:

"I think most draftsmen read with more than the usual amount of interest your article called 'Wanted' in the June number of your publication.

"It was natural after reading such an article to think of the qualifications and of the shortcomings of the many draftsmen I have come in contact with during five years spent in offices since leaving college, and to weigh them against the requirements set forth by the architect mentioned in your article.

"I have worked in several large offices where it was necessary to keep a number of men who did nothing but check the drawings made by other draftsmen. These men have usually been men of wide practical experience, little academic training in architecture, who have neglected to learn the first thing about tact, diplomacy, and agreeable personality development.

PENCIL POINTS

"The average draftsman has many things to worry and to annoy him during the day, and is easily "riled" by some checker who finds a mistake and who brings it in with a glow of triumph like one who is showing the waiter a hair he has found in his soup. I have often wondered why most men who hold such positions are constituted that way, and after many battles with the species, I have often wondered why more agreeable men are not selected for checking work, so that there may be less of disturbance and more of co-operation.

"We have heard that a rose to the living is better than a wreath to the dead, so I am taking advantage of the opportunity to mention the fact that in our large office there is a man who fills all the requirements outlined in your article from the viewpoint of the draftsmen in the office. So far as I know his work is liked by our employers, but I know that the draftsmen are always contented to have him check their work; because they not only feel certain that no error will get by him, but they know that he is always ready to suggest some short-cut, some simpler solution to a problem, and does it all in a gentlemanly, diplomatic way. This letter will probably result in nothing more than the waste of a few moments of your time spent in reading it, but I shall not have missed an opportunity to speak of a man whose work I admire."

For the convenience of readers who do not happen to have the June issue at hand we reprint below the essential part of the letter that started this discussion:

"Do you know a competent, practical architectural draftsman whom I can get to come into my drafting room and act as a sort of general censor of practical working details, a man whose mental attitude is such that he can keep good feeling among the draftsmen he comes in contact with and at the same time check over their work and aid in systematizing it, prevent errors of a practical kind and instruct them, where necessary, in standard, economical, and practical ways of doing the job? He does not have to be an engineer or an artist. He simply has to be a common-sense, level-headed, experienced, practical draftsman who has a thorough-going knowledge of good building practice. If you can tell me of such a man, I shall be glad to take him on, for he would be a God-send to this office."

We want to know what you think about this matter. Won't you write us a letter?

CONSTRUCTION DETAIL NUMBER

DETAILS of building construction are of so much importance in drafting room work that we have decided to devote an early issue of *PENCIL POINTS* to this subject—to bring out a "Construction Detail Number." It is our idea to prepare this number by the same method that made our "Specification Number" (January, 1923) so great a success. The idea is simply to present the best ideas worked out by readers in all parts of the country, to carry on our established policy of editing *PENCIL POINTS* *with* rather than for its readers.

Consequently, we invite you to send in drawings of one or more details of construction that you have used in actual practice and found satisfactory. From among the details sent in in this way we shall select for publication the ones we believe will be of the greatest use to our readers. The architect supplying the detail will in each case be credited by mention in connection with its publication. We hope that most of those who send in details may find it possible to prepare the drawings in such a way that they will not have to be redrawn for publication. Since the drawings in Knobloch's "Good Practice in Construction" have reproduced especially well, it is suggested that the manner of drawing shown in the plates of that book be followed in the preparation of drawings for the "Construction Detail Number." The plates in Mr. Knobloch's book were drawn at twice the size of the engravings. That is, they were drawn 14 in. x 19 in. and reduced by the engraver to 7 in. x 8½ in., measured on the border line. All the lines were drawn twice as thick as they appear in the book. They were drawn in pencil, then traced on tracing cloth in black drawing ink.

As we wish to publish in this issue a wide range of construction details we shall be glad to have details of small buildings such as frame houses, and cottages as well as buildings of medium and large size.

As we wish to present this material as soon as possible, will you please prepare your contribution and shoot it along to us. The more contributions, the better for everyone, because more helpful ideas can be drawn from a big fund of material for the improvement of the practice of building construction. Now, let's go!

THE GEORGIAN PERIOD

THE new edition of "The Georgian Period," just brought out by the U. P. C. Book Company, Inc., 239 West 39th St., New York, is one of the most useful books an architect can have. Ever since 1898 "The Georgian Period" has been regarded as the most important, authoritative source of design inspiration for architectural work in the manner of Colonial days, for in it are preserved accurate records of Colonial houses, churches, and public buildings in the form of detailed and measured drawings and photographic reproductions. More than one hundred architects originally contributed to this monumental work under the careful guidance of William Rotch Ware. The new edition has been arranged and indexed with a view to making it especially convenient for reference in the architect's office. The work is in six art portfolios, size 10 in. x 14 in., 454 full-page plates and measured drawings, 272 pages of text with 500 illustrations. The price is \$60, postpaid. It can also be had in three bound volumes (buckram) at \$75 the set. It is also sold on a partial payment plan.

THE TECHNIQUE OF RENDERING, PART I.

BY FRANCIS S. SWALES

In the serial article of which this is the first installment Mr. Swales explains practical methods of rendering. These methods, though based on what may be regarded as standard practice include variants that have been found effective in actual work. In preparing this article Mr. Swales has drawn freely upon the fund of experience he has gained in making renderings of innumerable important works as well as upon his training in Paris. For the purpose of making this article as helpful as possible, examples in wash are reproduced here at the full size of the originals and with the closest possible approximation to the tone gradations of the drawings. Some of these examples illustrate common faults in rendering, while the text explains how the trouble can be avoided.—ED.

TECHNIQUE is that combination of mechanical skill and knowledge with personal peculiarities in performance which makes style. The great bulk of that which passes for art is merely technique. It is something which can be taught—something which anybody can acquire by observation and practice, and in its best use it is the very important vehicle of art itself.

According to O. Henry, "Nature moves in circles; art in straight lines." "Beauty," he says, "is Nature in Perfection; circularity is its chief attribute. On the other hand, straight lines show that Nature has been deflected. Imagine Venus's girdle transformed into a 'straight front'."

It is interesting to find a brilliant and popular writer contending, no matter how humorously, that art is an unbeautiful deflection of Nature and a matter of straight lines. O. Henry was leading up to a demonstration that the architecture of New York was the cause of a change of nature of certain of his heroes.

Oscar Wilde and Whistler charged that Nature is seldom beautiful unless aided by the ideals and work of artists—which is better humor than O. Henry's, because they were serious, and believed themselves to be artists—but neither of them seems to have considered "straight lines" as the path in which art moves.

To architectural drawing and rendering Kipling's conundrum of the workshops, "it's clever, but is it art?" may be applied, and answered variously; but as to technical qualities, the work of our best American delineators ranks high among the best that has ever been done. Whatever conduces to bring into existence the expression of the ideals of the artist or helps to discover his talent or, possibly, genius, is a matter of no small concern to any lover of the beautiful. Ideas and feeling form the substance of a work of art—without them it cannot be produced. But, unless other people can recognize in a work the mystery of their own conception of beauty and unless the ideas are conveyed the work will have no message for those who can appreciate but cannot themselves create. Technique is a means of artistic expression and should be understandable to even those who have the least artistic perception.

"We are accustomed to consider architecture," says Herman Grimm, "as that art which is most nearly allied to mechanical skill." Leonardo da Vinci laid down the rule that, the less resistance afforded by the material which is worked, the

higher is the art. According to this, therefore, the painter stands higher than the sculptor, the sculptor is better than the architect, the poet is superior to the painter. To carry the argument another step: the draftsman with only a chunk of charcoal and how to use it standing between him and self-expression, holds the "altitude record" above the whole lot.

Charcoal, as the material affording the least resistance to working, is the most facile means by which the beginner may discover his power of draftsmanship. If every draftsman could begin his studies with the knowledge that comes from several years' experience, each probably would choose charcoal as the medium and the plaster cast from the antique as the model from which to obtain the groundwork of form, color value of objects, and gradations of light, shade and shadow. A year or two of practice with charcoal forms a habit of arm, hand and finger movement which is free from cramp or hard-fistedness. Drawing from the white model tends to lightness of touch. Also, to the observation that a consistent width of line and of white space between the lines is the fabric of technique; that brilliant and luminous effect is due to the light reflected from the paper or white spaces between the lines and from light surfaces and "high lights" between darkened areas, and clearness of expression is the result to be sought. Such observations apply to all methods and media—whether the method is free as in a pencil or pen sketch or tight and hard as in a Raguene engraving, loose as in a watercolor, or solid as in an oil painting. Lines are, theoretically, merely the boundaries of surfaces, and it is the surface—the space between the lines—that is the important consideration. The line itself is secondary.

This is obvious in such finished wash drawings as the details of the Cori Temple, by Emanuel Brune (Figure 1), and of the Museum at Nantes, by M. Josso (Figure 2). Though not so obvious it is still clearly to be seen in the simply rendered drawings of everyday practice such as the Club House façade by Mr. Rodman (Figure 3). It is less apparent when one considers a drawing such as the post-colonial house (Figure 4), which is a "line drawing," but if note is taken of the method of retaining the importance of the fenestration, and the delicate detail of the entrance and cornice, it will be seen that, even in such drawing, it is the white spaces between the lines, that count most. The ornamental sash bars of the fanlight and side



Figure 1. Detail of The Cori Temple, Wash Drawing by Emanuel Brune.

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Figure 3. Club House. Carey Rodman, Architect.

lights of the doorway are outlined and the "white line" between is the paper surface which defines the width of the sash bars. Here is a point of technique to note: the outline of the bars becomes part of the poché when the poché is put in to indicate the glass. If that fact had not been borne in mind when the outlines were drawn, it is probable that the white line would have lost in width. This drawing was made twenty-five years ago and, had the bars been drawn in with Chinese white, it is probable that they would have disappeared long ago. The disadvantage of Chinese white or any color containing it, is that it powders and separates from the paper. Drawings of this kind (Figures 4 and 5, which are reproduced at the actual size of the original drawings) serve to indicate a practical limit of fineness of technique for purposes of reproduction. The free-hand lines of the drawing of the semi-elliptical casing are as fine as will stand up on reproducing plates, and also about as fine as can be obtained by the use of the finest full-size (not crow-quill) pen made that is suitable for drawing.

The quality and width of line and the few "tricks" which are part of every good line drawing (whether free-hand or mechanical) and a few points regarding putting in poché are the earliest considerations and causes of doubts and questions on the part of the beginner.

Under all circumstances lines should be clear and firm but not necessarily dark in color; usually, but not necessarily, uniform in width. Gradation is the essence of luminous quality and this can often be accentuated, particularly in the case of wash drawings, by the use of a line of diminishing width. Illustration becomes necessary (Figure 6) to point out "what to do," and what to "don't." The illustration is drawn on ordinary sketchblock paper, with an HB pencil. The ink-lines and poché are made with waterproof black ink and the washes are of ivory black. The points to which it is intended to draw attention are numbered 1 to 9 inclusive. No. 1 shows pencil line graded in intensity from dark at the top to light at the bottom; No. 2 shows ordinary width of inked line for drawings to the scale of two centimetres (one fiftieth full-size) or larger, our

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Figure 2. Detail of Museum of Nantes, France. Drawing by M. Josso.

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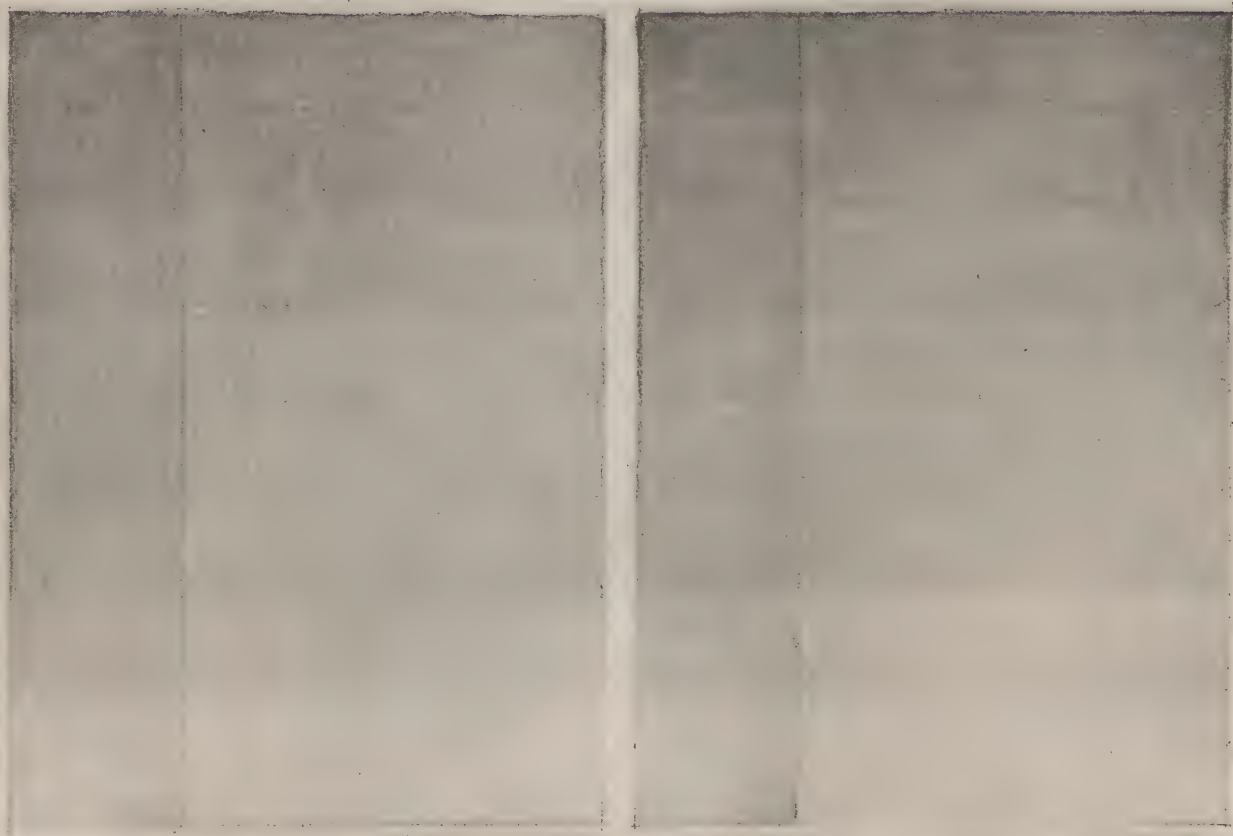


Figure 9.

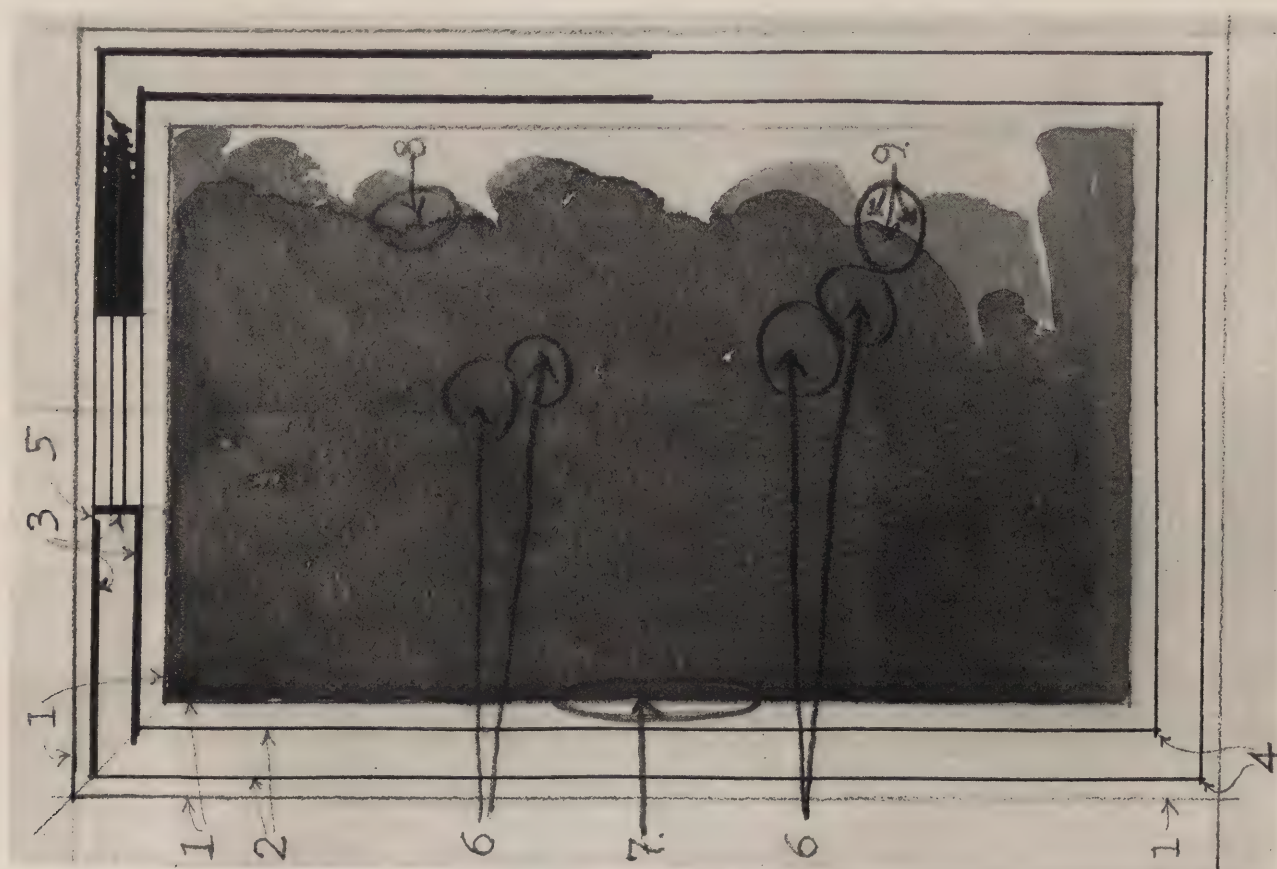


Figure 6.

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Figure 8.

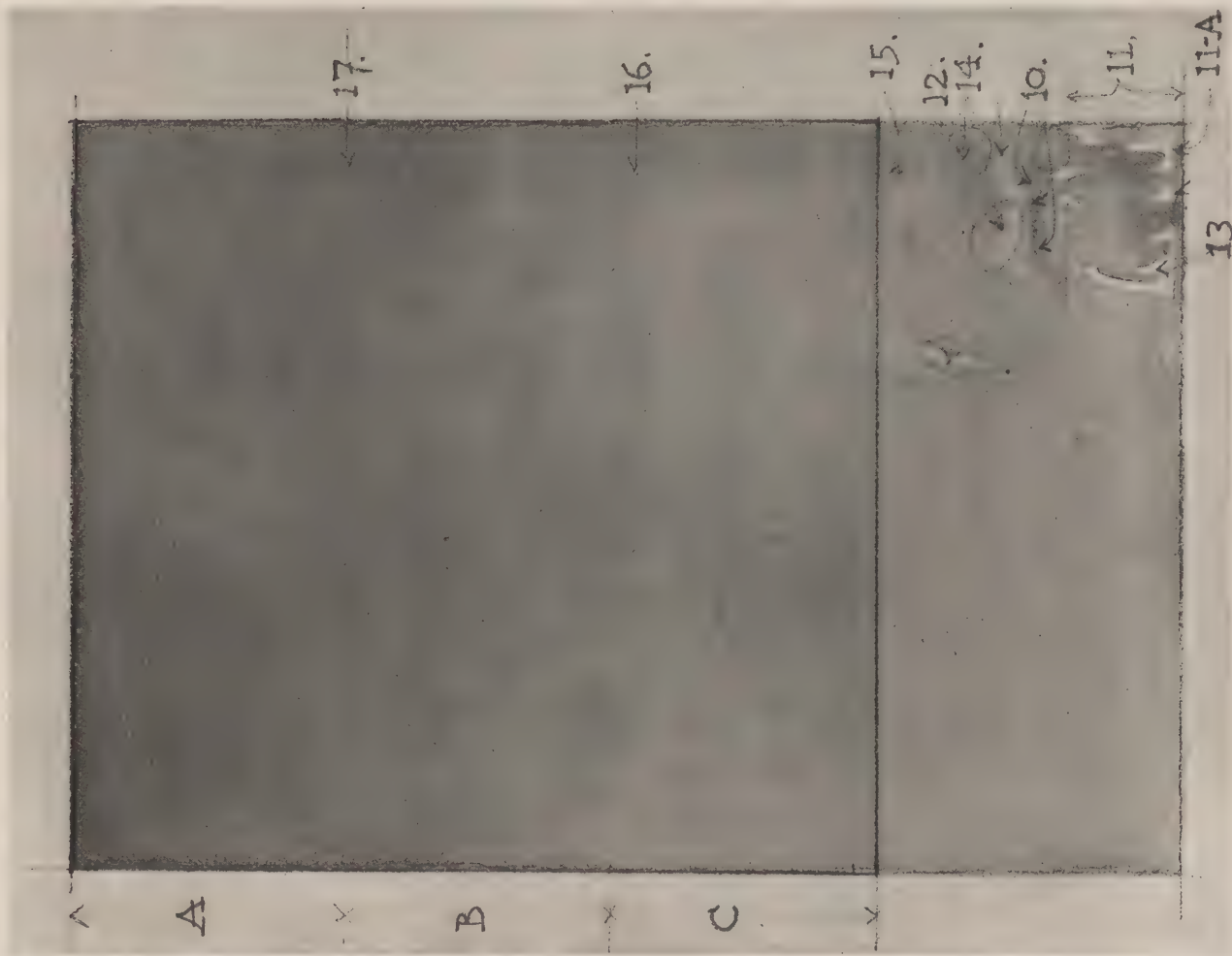


Figure 7.

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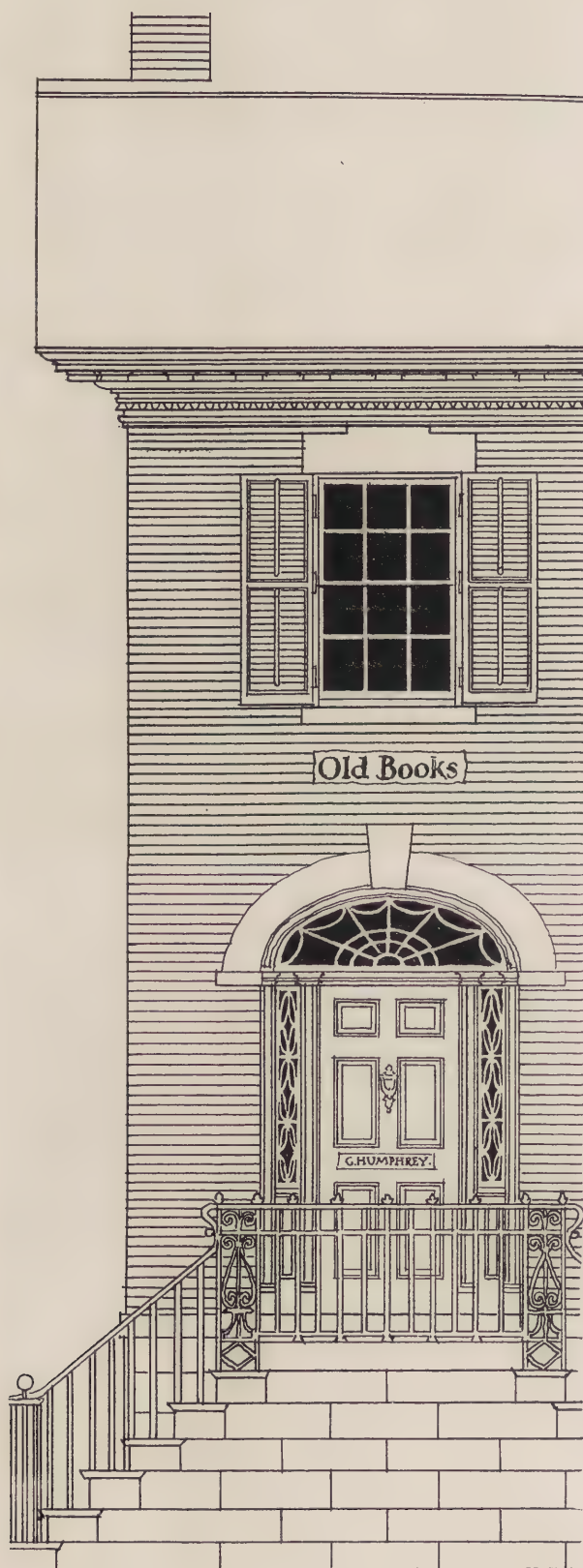


Figure 4. Pen-and-Ink Drawing of a Post-Colonial House, by Francis S. Swales.

$\frac{1}{4}$ -in. scale (one forty-eighth full size) for example. It may be gauged by the width of the markings on any good folding rule. No. 3 shows heavy line ruled within working line as a margin of safety preparatory to completion of poché. Four shows excess length of working lines to secure sharp corners. No. 5 illustrates a heavy line, margin of poché, stopped short of its proper termination to show bad effect of corner if left that way; note also that heavy cross lines, to define openings, are put in first to prevent "run-overs" of lines parallel with wall. Nos. 6 to 9 inclusive illustrate ordinary troubles with heavy washes; No. 6 shows a "lumpy" effect in the wash caused by irregular settlement of pigment due to cockling of paper too thin to stand very wet washes, or, washes too wet for such thin paper. No. 7 shows an irregular, hard line, almost black, formed by two heavy washes, each too wet, carried to the same line. No. 8 shows the edges of two washes. The first contained about the right amount of wetness to permit proper drying and the second contained too much water and dried too slowly, leaving a settlement of excess pigment along the edge. No. 9 shows the effect of running one heavy wash over another without gradation—the method often used to indicate trees in different planes of remoteness.

Figure 7 is an illustration of the handling of graded washes. The pigment is ivory black and the washes are run in the ordinary and orthodox manner as laid down by the late Professor Guadet at the Ecole des Beaux Arts. The gradation is made through three horizontal zones, the height of each being indicated by the dimensions A, B and C, and the bottom zone (which is the same tone as Zone C) was reserved to indicate points to observe, which are numbered and indicated by arrows, as before. Number 10 shows an irregular "worm-track" or "run-back," which is caused by too much wetness at one spot (see also No. 8, Figure 6); a puddle forms, which dries around the edges first, and in doing so attracts particles of the pigment. No. 11 shows the height and kind of brush stroke which is carried across from side to side of the surface washed-in with a series of horizontal rows of such strokes in each successive wash. No. 12 shows an "air-hole"—a place passed over by one of the washes. Frequently such places are purposely left to give texture or vibration to a wash. When left accidentally they should not be retouched. If retouched while wet a "run-back" is likely to be caused; if retouched after drying a patchy effect will result. No. 13 shows the amount of pigment carried down (over the white paper left purposely to show through first wash) by the clear water used to extend the gradation of second wash, covering zones A, B and C, and graded out to the bottom of the lowest zone. No. 14 shows similarly the amount carried down in the third wash, covering zones A and B, at full strength and graded out through the other zones. No. 15 shows an edge formed by the slight amount of pigment picked up by the clear water used to grade out the wash covering zone A at full strength and zone B at half

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strength. In No. 16, the half tone wash was allowed to stand about half a minute before grading out, while in No. 17 the grading was carried through without interruption.

The four last points illustrate the necessity of carrying each wash *over the whole area* in order to avoid edges or streaks, and show that the operation must be continuous, at an even rate of speed. Although a wash may be carried over a large area with clear water, it picks up enough pigment to constitute a light wash which will leave a water-mark or "worm-track," wherever it is allowed to dry. Every wash, however light, should therefore be carried over the *whole area* affected and to a definite line of finish.

Figure 8 shows an ordinary, graded wash made in a single operation. The full strength of color is carried over two or three horizontal movements of the wash, the brush always moving vertically in little dabs. Water is then added to the wash in the *godet* (color cup) and the wash is carried down another inch or so, more water added in the *godet*, and so on.

Figure 9 shows a method of giving a graded effect without any actual gradation of the tone. The area is divided into a number of horizontal zones. In this example it is divided into eight zones. The wash is first carried over the whole area and allowed to dry; then a second wash is carried over seven of the zones and allowed to dry; then over six zones, and so on. The area at the left of Figure 9 was washed, with the tilt of the drawing board downward, from dark to light. At the right, the tilt was downward from light to dark. Under a magnifying glass a slightly stronger arris is found between the zones at the left, indicating that a softer grading would result from working from light to dark down the tilt of the board. The tilt tends to cause particles of the pigment to flow downwards towards the edge of the washed area which it is desired to keep darkest. The method to the left is used in the case of fluting to columns; that to the right for curved roofs, large mouldings on quarter-full-size or full-size details. In either of these cases, however, the zones are spaced out

equally on the section, or profile, and projected so as to indicate the curvatures on the elevation by the amount of each zone visible.

The graded wash shown in Figure 8 might have been made in the reverse sense—by beginning with the lightest tone at the top and grading downward to darker tones, adding pigment in the *godet* instead of adding water.

SMALL HOUSE DESIGN COMPETITION.

A COMPETITION for the Best Design for a House Costing Not More Than \$5,000 is to be held under the direction of the Plans and Planting Committee of the Community Arts Association of Santa Barbara, Cal. Carleton Monroe Winslow, Architect, Van Nuys Building, Los Angeles, Cal., has been chosen as Consultant. The competition is open to everyone.

Those desiring to compete must register with Mrs. O. L. Hathaway, Business Secretary of the Community Arts Association, 936 Santa Barbara Street, Santa Barbara, Cal. Written applications must be received before 6 P. M., August 15, 1923, but such applications postmarked on August 14 will be considered as eligible.

Drawings must be received by the Business Secretary of The Community Arts Association on or before 10 P. M., September 1, 1923. For the convenience of Los Angeles competitors, drawings will be received at the office of the consultant on or before the same hour and date.

The prizes will be as follows: First Prize, \$500; Second Prize, \$200; Third Prize, \$100. There will be five honorable mentions accompanied by prizes of \$20 each, and five honorable mentions without money prizes.

The subject is a dwelling house, suitable for California, of not over five rooms, including living room, dining room, kitchen, two bedrooms and bath (living room and dining room may be combined, but will nevertheless count as two rooms), placed upon an inside lot fifty feet wide, upon the street and building line, and one hundred fifty feet deep, without an alley in the rear, also a garage for one car, which may or may not be separate from the house and placed anywhere upon the lot. The character of the house, such as an exterior of stucco, shingles or clapboards, also the size of the rooms and whether the house shall have one or two stories, is left to the discrimination of the competitor. The drawings must be accompanied by a *bona fide* estimate of cost by a responsible builder. The house must not cost over \$5,000.

All drawings awarded prizes or mentions will become the property of the Community Arts Association. Competition drawings will be exhibited in connection with the Annual Exhibition of Small House Designs of the Community Arts Association, opening September 15.

All who contemplate entering this competition should apply promptly to Mrs. O. L. Hathaway, at the address given above.

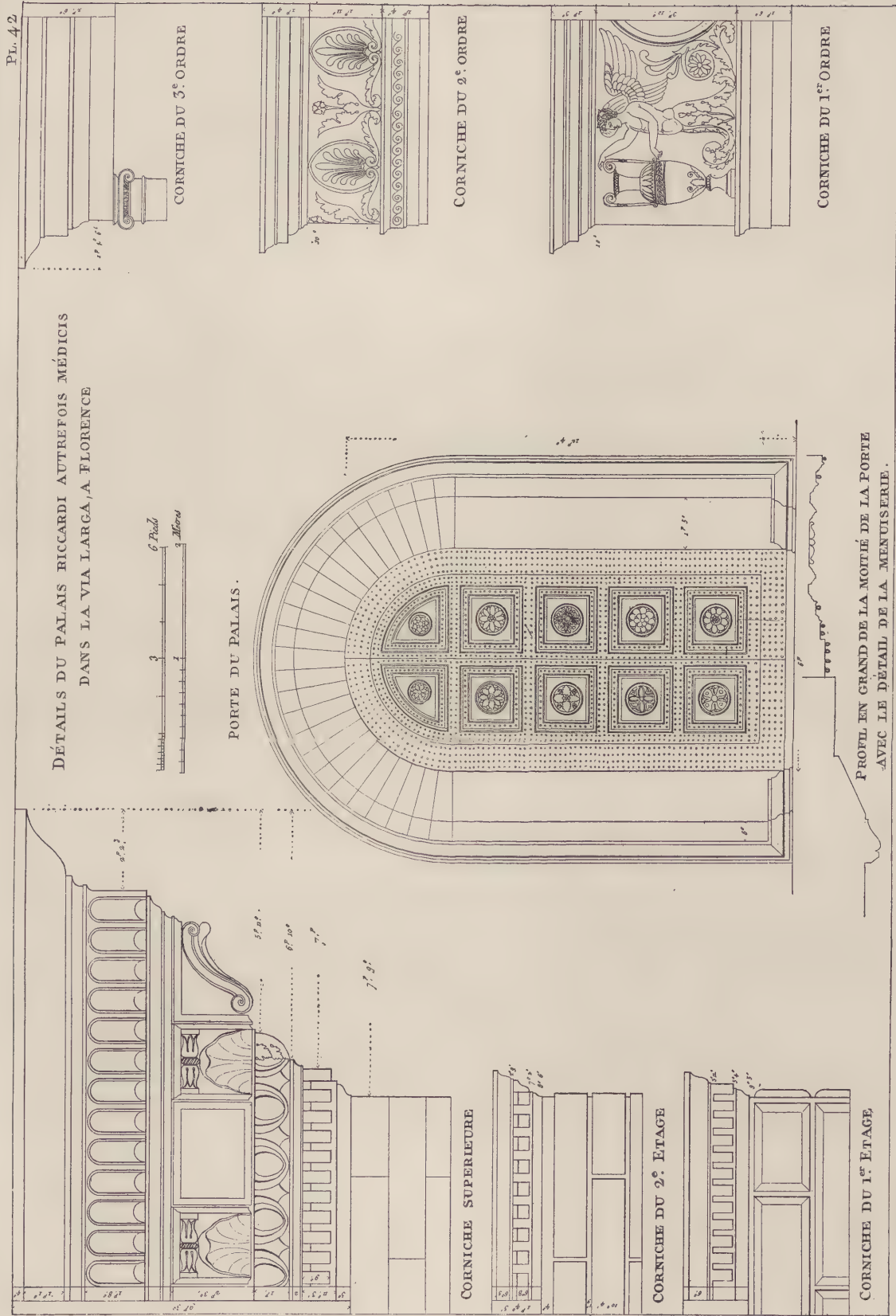


Figure 5.



DETAIL OF THE TEMPLE OF JUPITER-STATOR, ROME
FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

On the other side of this sheet is reproduced an excellent drawing of details from the Temple of Jupiter-Stator, one of the most notable of the monumental architectural works of Imperial Rome. This plate is interesting also as an example of fine rendering. This plate is from the book of one hundred selected plates from D'Espouy, now being brought out by the publishers of this journal.



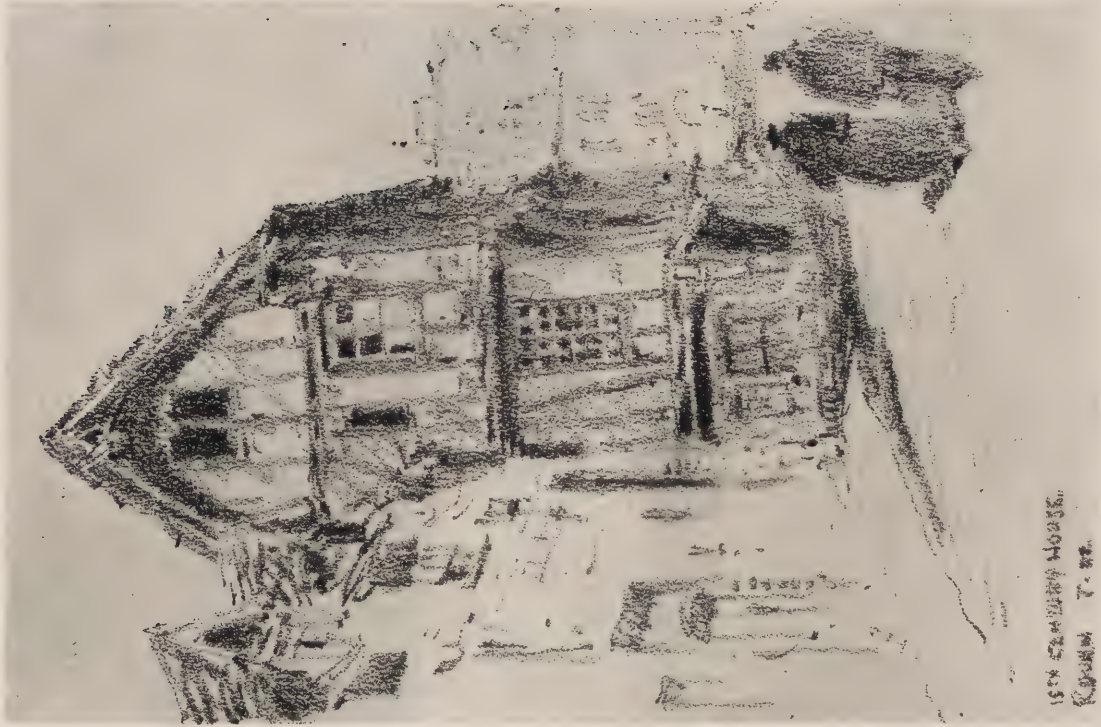
DETAILS OF THE RICCARDI PALACE, FLORENCE, FROM "ARCHITECTURE TOSCANE"

The plate reproduced on the other side of this sheet shows details of the Riccardi Palace, which was designed by the Florentine architect, Michelozzo Michelozzi and was begun in 1430. The great beauty of this palace made it the favored place of residence of sovereigns visiting Florence. The main doorway, which is shown in this plate, is regarded as one of the most beautiful in Florence and is richly decorated with sculpture and bronze bosses. This plate is from the reprint of "Architecture Toscane" now being brought out by the publishers of this journal. This work by Grandjean De Montigny and A. Famin was first published in Paris in 1815.



STUDY BY WILLIAM COTTON FOR CENTRAL FIGURE IN MURAL DECORATION
IN THE FOYER OF THE CAPITOL THEATRE, NEW YORK CITY

The figure study in pencil which is reproduced on the other side of this sheet is the drawing made by William Cotton for the central figure of his great mural decoration which extends across the grand foyer of the Capitol Theatre, New York City. It shows the artist's method of studying the composition and modelling of his figures, which are so important if a work is to have artistic worth.



PENCIL SKETCHES BY ERNEST E. WEIHE

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Two of the many pencil sketches made by Ernest E. Weihe during his recent stay abroad are reproduced on the other side of this sheet. These sketches, made with a comparatively soft, blunt pencil are characteristic of one type of Mr. Weihe's sketches. Other of his sketches show evidence of having been drawn with a comparatively hard, sharp pencil point, and these also are excellent. Many of Mr. Weihe's best drawings are in pencil with the addition of color, and cannot be represented successfully in monochrome. Mr. Weihe won the Paris Prize of the Society of Beaux-Arts Architects in 1919 and has just returned from his studies abroad.

THE MAKING OF WORKING DRAWINGS

PART IV, SHOP DRAWINGS ETC.

BY JOHN C. BREIBY

This is the fourth of a series of articles in which Mr. Breiby of the staff of Carrère & Hastings is giving much practical information on drafting room work. The first article covered the preparation of general drawings, the one-quarter or one-eighth inch scale drawings. The second article covered the making of three-quarter and other scale details. Full-size details were treated in the July issue, and at the conclusion Mr. Breiby will take up the preparation of sketches, etc., particularly sketches of interest to the drafting room.—Ed.

THE idealist is always confronted by that which is of an absolute materialistic nature.

The very means of expressing idealistic impressions are material mediums or forces produced by material means. The speaker or singer uses the material organism of the vocal cords to produce sound; the pianist obtains tones by means of a mechanical device; the painter has the canvas, brush and color with which to express thought. All of the impressions conveyed are the results of vibrations given off from material mediums to affect the hearing or sight. It may be said in passing, that properly related vibrations produce pleasing tones or colors, while vibrations lacking organization produce noise or unsightliness. It does not come within the borders of this article to consider the perfect relationship of vibrations to produce pleasing effects, or to consider the many theories regarding the nature of matter, or to explore any of the numerous and attractive bypaths for thought that are opened by the idea suggested above.

While what has been stated here does not in a sense bear directly upon the work of the architect, it is important indirectly, for the architect must express his ideal in material, and a realization of this fact gives a new appreciation of the importance of the shop drawings of the trades.

The fine arts and the sciences are parallel, the techniques differ, but reason is always the basis. The architect must solve his problems by much the same course of reasoning that the doctor uses in diagnosis, in determining the requirements of the client in the one case and the ills of the patient in the other case.

This may seem to be apart from the subject of this article upon the use of shop drawings, but when thought is given to the very source of material supply, its extraction from nature, its preparation and fabrication before the materials are made ready to be used in the construction of buildings, it becomes clear that the material side is so complex as to call for the co-operation of many men of many trades. Millions of workers are employed to further this end. Perhaps next to the obtaining of food stuffs for the sustenance of life, the erection of buildings, for the protection of life, is the most necessary. Caves and rude huts were made habitable, before personal garments were deemed necessary.

The architect, or master builder, has always since the beginning of civilization been the one to lead

the work of erecting shelter, and under his guidance the uses of tools and materials are directed towards this purpose.

Workers of material know their own particular branches of the work, what methods and tools to use for shaping the material for its proper function. In the last article, on the making of full-size details, attention was called to the fact that "these are the days of specialists." Little does the average person, who registers at a modern hotel, know or perhaps care to know, what thoughtful, intricate and careful preparation has been made for his personal comfort. The elevators run smoothly and quickly; desired temperature of water is obtainable; the pressing of a button will summon a servant; the meals are well prepared and well served, etc.

The architect does know and does care how all of these details are taken care of, for it has all been thought out and prepared according to his wishes and under his supervision.

The architect knows all the requirements necessary for a particular building which he has designed, and for which he has prepared working drawings. He cannot, however, be the expert for the many details relating to special trades which enter into the construction but belong to the province of men who have specialized in engineering or some trade. For instance, while he may be well trained regarding the strength of materials, he may not necessarily know how to obtain the maximum strength of structural steel at the minimum cost for the particular problem in hand.

To enable the architect to consider in every detail, the many parts and to solve the special technical problems, are summoned to his aid, experts in the many branches of building construction. This does not refer to the technical experts on his staff, nor others engaged as consulting engineers, as mentioned in part of one of these articles published in the May issue of PENCIL POINTS, as they are really a part of the architect's staff.

After the contract for the erection of a building has been awarded, subdivisions of the work must be taken care of—the steel work, stone work, ornamental iron work, mechanical work, and so on—all of which is executed either under subcontracts or direct contracts.

In order that they may carry on their work intelligently, all trades engaged upon important work prepare such drawings of their particular parts of

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the work as may be needed to supplement the architect's drawings, all of which are governed by, and developed from, the architect's general and detailed drawings or layouts.

Before proceeding further, it must be said that as the architect is responsible to the owner for the proper execution of the work, he has, or should have, the power to approve or disapprove, upon showing good cause, the acceptance of any contractor or subcontractor who is to perform work.

Each particular contractor or subcontractor must prepare his work to form a part of the whole, and by methods and means of his own, therefore the shop drawings form a schedule of what is to be done and the order in which to do it. All shop drawings are submitted to the architect or his engaged assistants, for proper checking and co-ordination.

Every particular trade work must follow through certain channels in order that the work may be carried out properly. The contractor for the stone work must arrange that a particular piece of cut stone will be followed through and be set in its appointed place in the building. A block of stone from which many stones may be cut, must be placed on the saws with the best use of the material in view, therefore, on a stone shop drawing, the particular stones are marked and numbered, and such marks or numbers will be followed through, from the first block of stone selected, to the final position of setting at the building. The steel work will be carried through in the same manner, for the use of the proper shapes and sizes of members and so on, all trades requiring layouts for the execution of their work.

After the contractors and subcontractors receive all the necessary scale drawings, specifications and full-size details from the architect, they proceed with the preparation of shop drawings—first to know how to make proper use of their materials, and secondly, to show exactly to the architect, how they purpose to execute the work with machinery and materials at their command. The shop drawings are really the final word in showing what will be done. It may be well to say, that for work like the ordinary excavating, brickwork, ordinary partitions, plastering, in short anything the execution of which can be described in the specifications, shop drawings are not necessary, and for small operations such as the construction of a frame building where no special features of work are required, and the architectural details are sufficient to tell the mill man, generally, how a moulding should be built up, no shop drawings are required; but even then, the mill man will make rough layouts for his own use, showing methods of building up work, etc.

Remember the contractor cannot proceed with the work until his shop drawings have all been approved by the architect—they are his instruments of actual fabrication.

If one could but see at one glance, the complete operation of obtaining all the necessary materials and the preparation thereof from the various sources of supply and fabrication plants, one could fully realize how necessary it is that all required information and drawings are issued to the contractors as

early as possible after the contract has been let, in order that they may prepare shop drawings for the architect's approval, and proceed with the work on schedule. Many operations have to be gone through by each trade, before their material can be made ready for use.

The architect with his assistants will check all shop layouts or setting drawings submitted by the contractors, and generally this involves (before the drawings are finally approved) corrections, disapprovals, etc., rechecking, etc.

Do not neglect to check contractors' submission drawings as rapidly and intelligently as possible. It is impossible to lay down any rules for this work. It is from the shop drawings that the architect can best co-ordinate the work—for instance, the marble man cannot proceed with his work before his shop drawings have been checked with the steel work which is to carry the marble, or the distance between the walls and openings determined; the steel columns cannot be set, unless provision has been made for the proper footings; the elevators cannot be installed unless the structural steel of the elevator hatch has been located and the shop drawings submitted for the elevators has been checked for clearances, etc.

Many times it is necessary—before the contractor can prepare shop drawings and proceed with a particular portion of work—that the work into which it is to be placed must first be erected, in order that measurements may be made at the building, to obtain required results. As an example, in a paneled wood-finished room, the surrounding rough walls should be in place, before any intelligent, accurate division of the wood panels can be determined, and measurements should be made of constructed work before the woodwork is scheduled or built. All this, the architect must determine and govern.

Check all drawings for clearances, dimensions in general, construction, etc.; check with the specifications to ascertain that they have been lived up to; check with the architectural working drawings. While the architect should check dimensions for his own satisfaction, he cannot be responsible therefor to the builders, for they must produce the materials according to their own methods and are responsible to the architect for the correctness of their work.

Where one trade comes in connection with another, it is most important to see that the meeting points have been properly solved. Do not let one trade wait upon others for the completion of work due to any neglect of not checking drawings, or in expediting the work. It is only fair to say, that most workmen like to find a way out of delays, by blaming "the other fellow," and "the other fellow" may at times, be the architect.

The shop drawings illustrated by Figures 1 to 7 were not selected for any particular types or standard methods, but they will perhaps give some idea of a little part of the actual construction work which enters into buildings, and show how the several technical experts have solved their particular problems in assisting the architect to produce the required results. It is well for the young architect to remember that he works with the men of trades,

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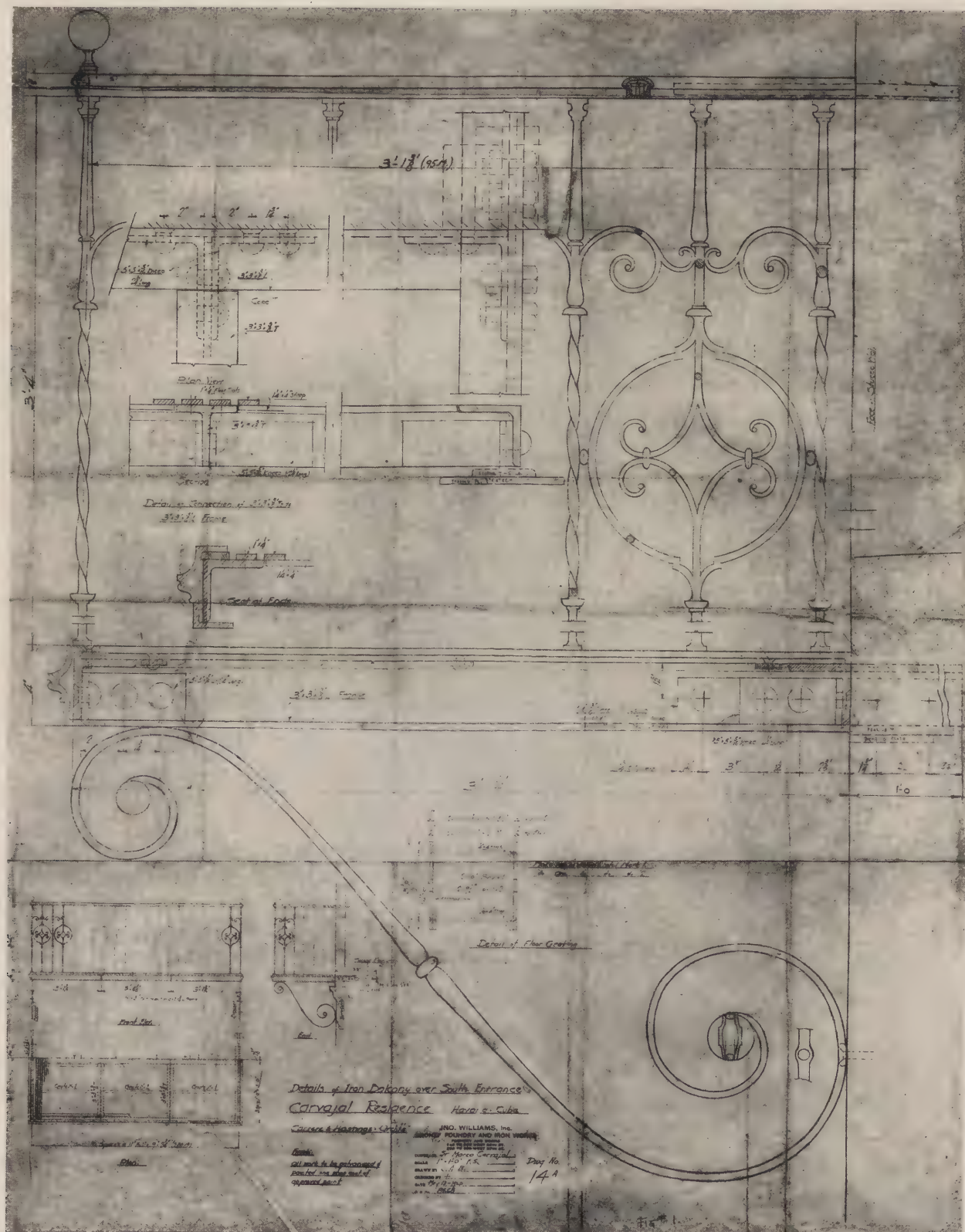


Figure 1. Details of Iron Balcony over South Entrance. Residence for Sr. Marco Carvajal, Havana, Cuba. Carrère & Hastings, Architects.

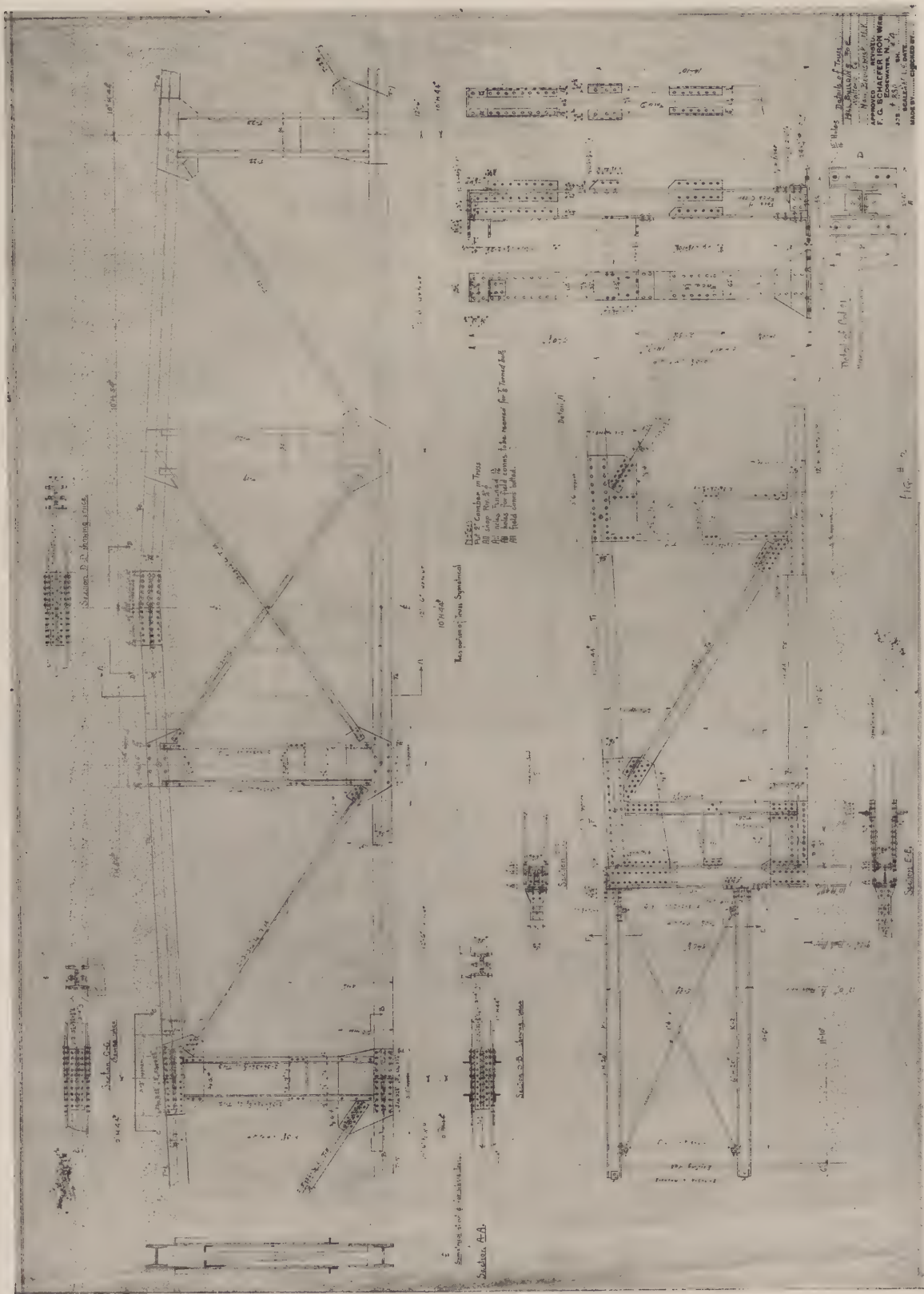


Figure 2. Details of Truss. Mill Building for Walton Co., New Brunswick, N. Y.

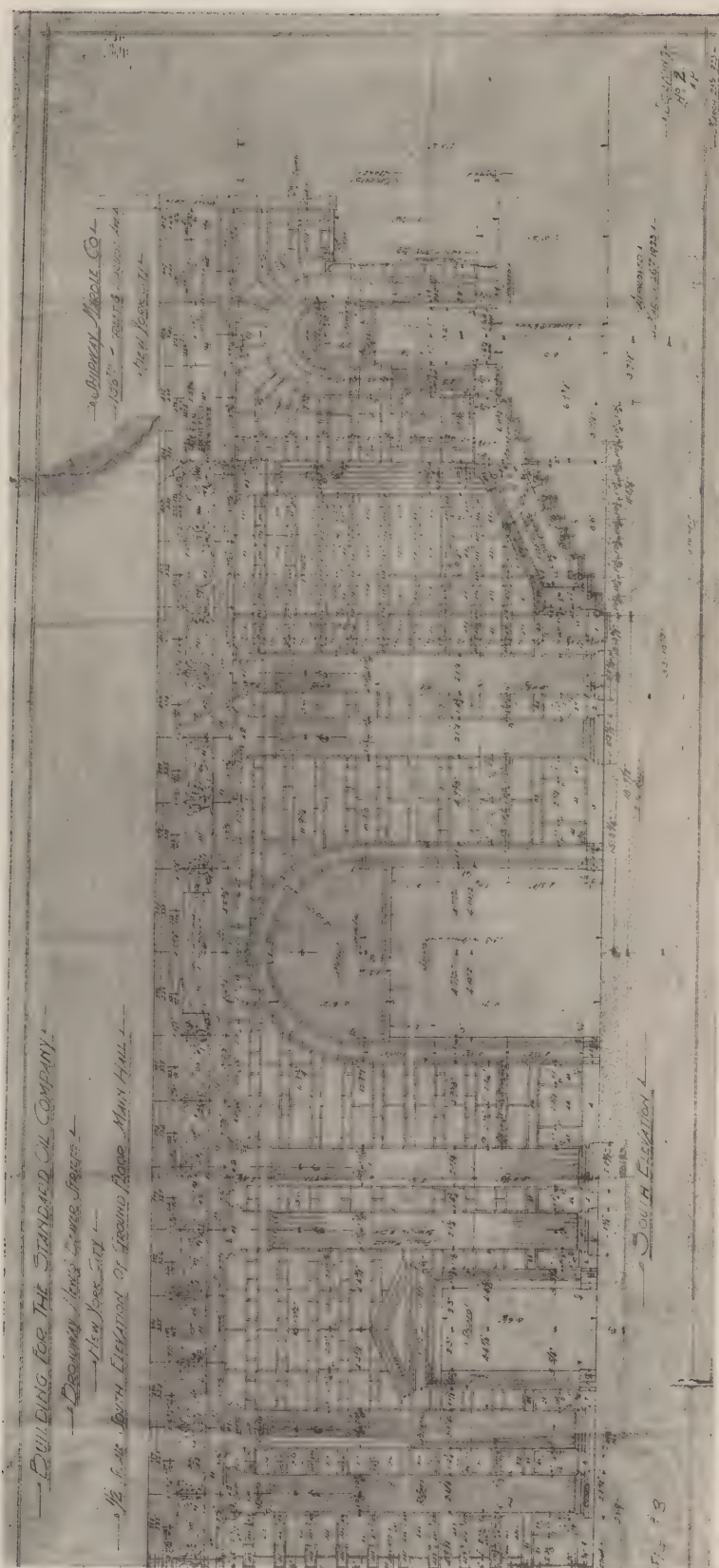


Figure 3. South Elevation, Ground Floor, Main Hall. Building for The Standard Oil Company, New York City.
Carrère & Hastings, Architects. Shreve, Lamb & Blake, Associated.

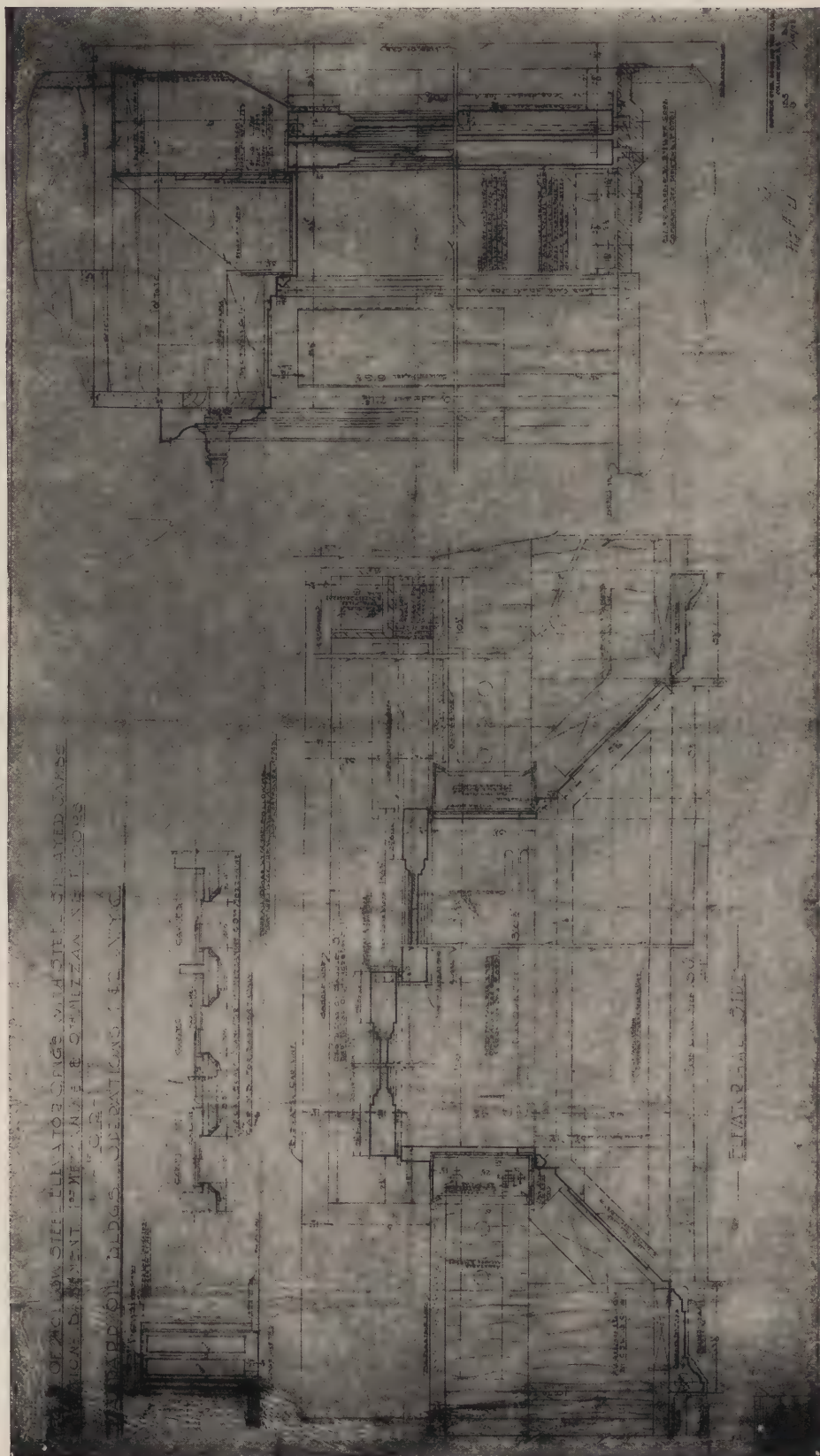


Figure 4. Detail of Hollow Steel Elevator Enclosure with Steel Splayed Joints. Carrere & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

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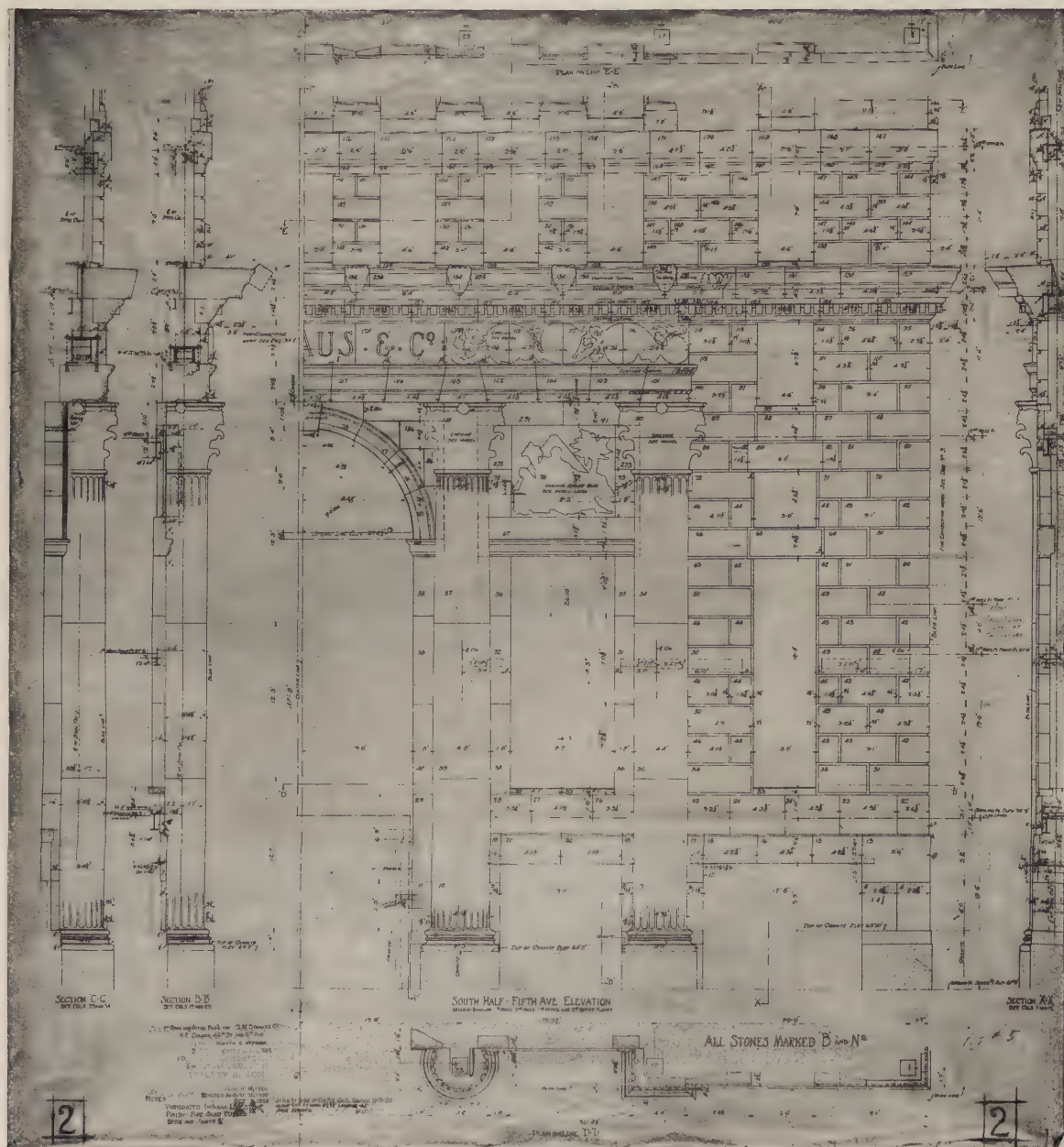


Figure 5. Fifth Avenue Elevation, South Half. Bank and Office Building for S. W. Straus & Co. Warren & Wetmore, Architects.

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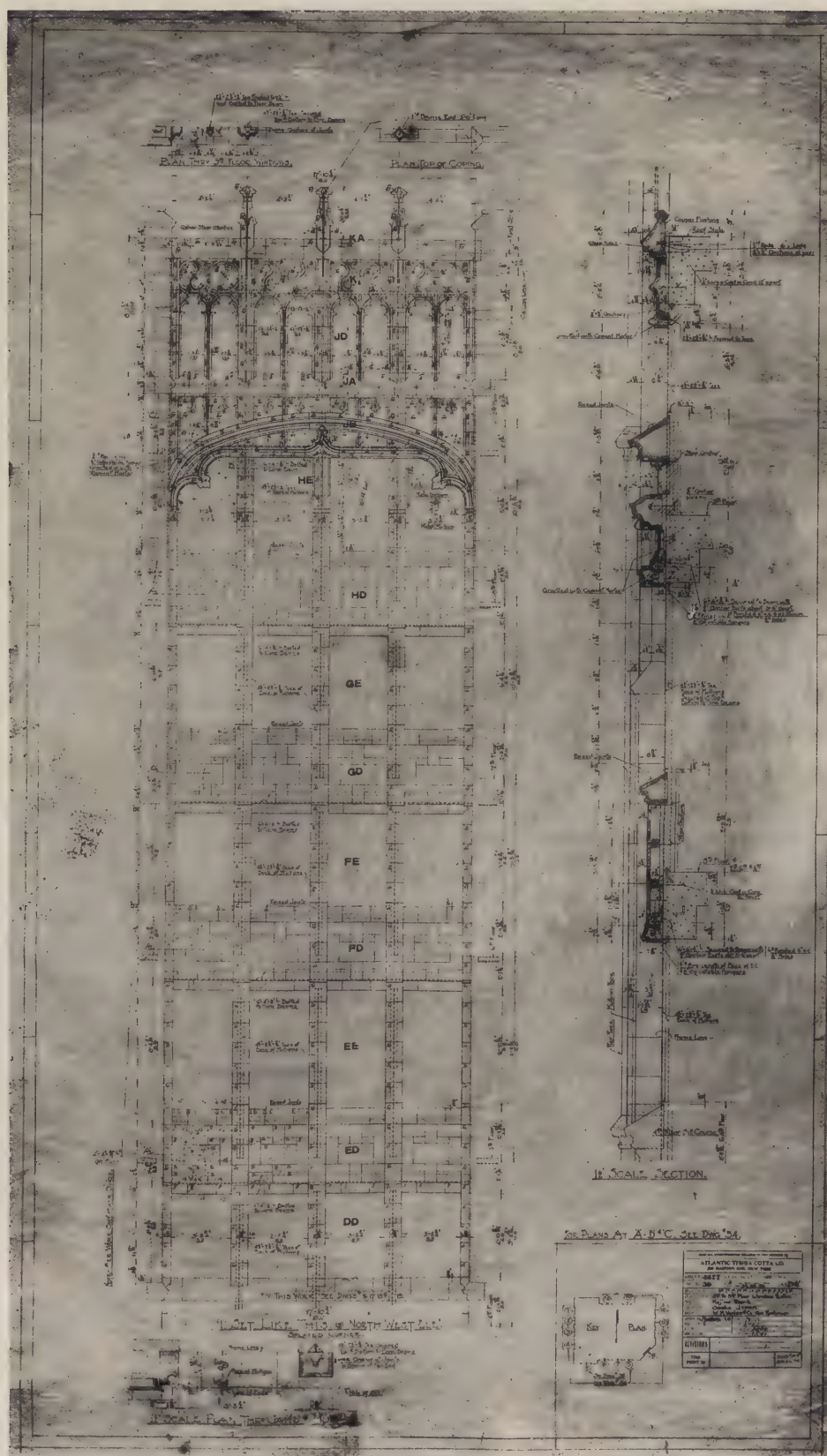


Figure 6. Shop Drawing of Part of a Terra Cotta Façade of a Banking Building in Japan. W. M. Vorics & Co., Omi Hachiman, Architects.

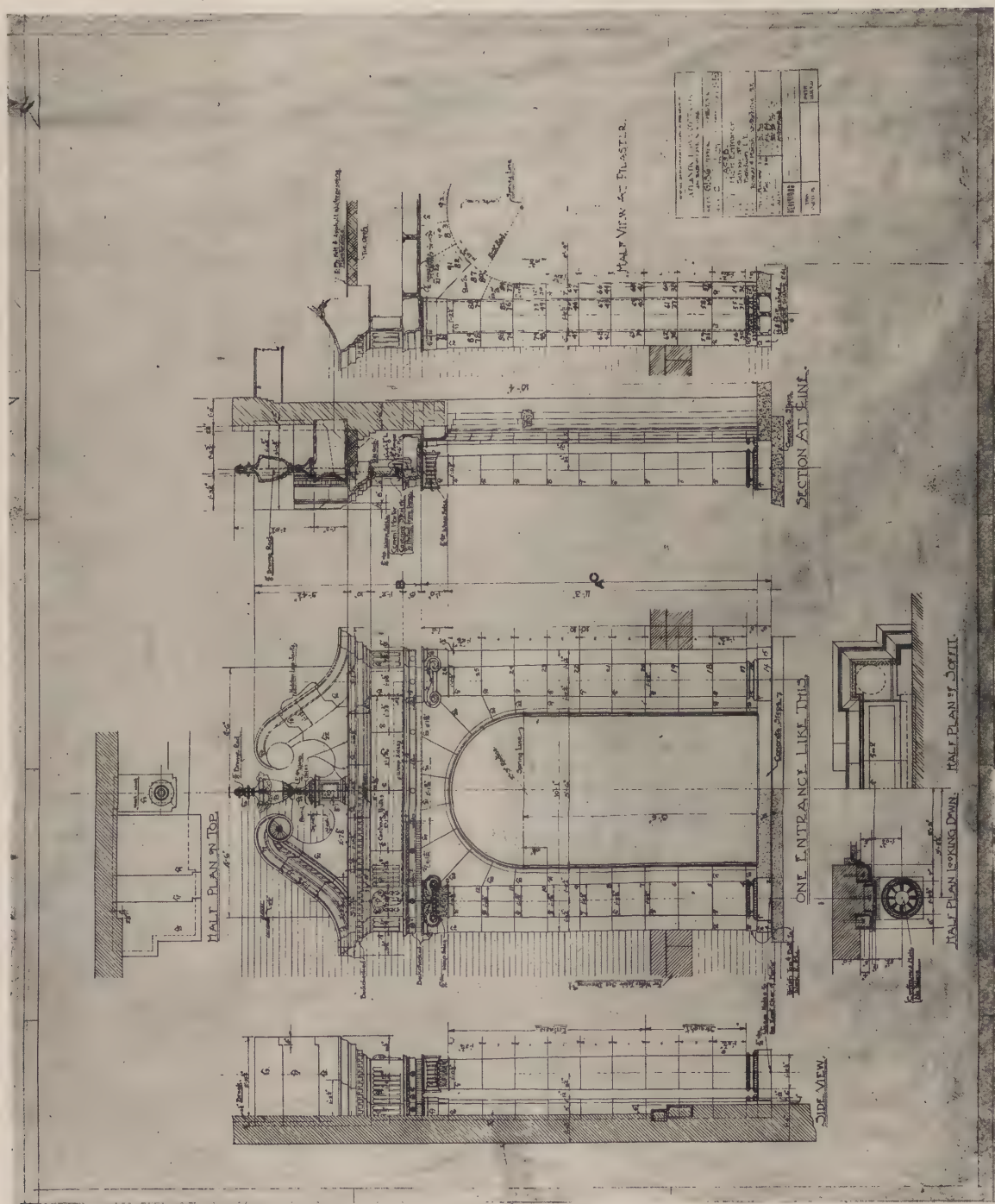


Figure 7. Terra Cotta Shop Drawing of an Entrance Door Feature of a School Building.
Tooker & Marsh, Architects.

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and while in a position to oversee and guide, is not set over them, for they are as necessary to him as he is to them.

Before beginning the description of the drawings, some mention may be made regarding the preparation of architectural models, and their relation to the success of the design. Architectural models of ornamental work, are prepared from the architect's details. The modeler is the artist engaged by the architect, and is therefore rightly to be called a part of his staff. It is by means of models that the wood and stone carver, the worker of ornamental plaster, iron work, etc., can obtain in three dimensions, that which the architect cannot show on drawings. The architect will confer with the modeler, as to the character of the ornament which he has conceived. After the models have been approved by the architect, plaster casts are made and sent to the job or shops, as actual instructions as to what is desired for ornamental effect—such models are then a part of working drawing development.

A word or two may also be said regarding the making of full-size details for some particular trades. Full-size details for terra cotta and cast metal work should be made for shrinkage allowances. Such information can readily be obtained from the various manufacturers of the material.

Figure 1 shows a scale and full-size shop drawing for the construction of an iron balcony. All of the structural parts are clearly shown—method of anchoring into the wall, method of building up of the metal mouldings. Refer to Figure 3 of the June issue of PENCIL POINTS, Part II being the subject on the preparation of scale details. Drawing illustrated as Figure 1 is the actual shop erection drawing of the balcony over the main entrance door. The architect in addition to the scale drawings, prepared a full-size detail showing profiles, etc., but it would have been a waste of time to attempt to show actual construction. The shop well knew how to obtain the desired effect, using their standard method of construction and with their particular set up of machinery.

Figure 2 shows a scale detail of a truss and supporting columns for a mill building. The truss is 88'-0" long, 9'-2" high at the center, and 7'-0 $\frac{3}{4}$ " high at the ends, connected to Bethlehem columns and supports twelve 45'-0" trusses, set in cradle struts.

The difficulties to be met in the fabrication and erection, required the trusses to be assembled complete on the shop floor. All the field holes were sub-punched $\frac{1}{8}$ " and subsequently reamed for $\frac{7}{8}$ " turned bolts. To properly distribute stresses, a 2" camber was put in the bottom chord. The gusset plates were shop riveted to the top and bottom chords. The columns, in order to withstand excessive bending, were detailed for concentric connections in as far as was possible. For all work of this character the structural engineers take care of the proper design of truss, etc., as to full development of each member as to stresses set up by the applied loading. This particular detail is a development of the combination of a stress diagram and erection drawing, drawn at $\frac{1}{8}$ " scale, which showed merely the skeleton of

the work required. In checking a drawing as described, clearances must be taken into consideration and in this case, this had to be checked for machinery layout. Also the work must be checked for the clearances of connecting members. Perhaps this detail is too complicated to be checked by the average architectural draftsman and such work should be left to the structural engineer, who originally designed the work. This drawing was selected, however, to show exactly what work comes under the head of a shop layout. It would also be interesting to tell about the transportation and erection in the field but this work really comes under the contractor's forces.

The success of estimating upon work of this nature depends a great deal upon the facilities for handling the work at the shop and the materials available. Substitution of material other than that shown on engineer's layouts is at times allowed, but the substitution must be of materials of the required strength in the direction of the maximum stresses called for on the architect's or his engineer's drawings. Oftentimes it is found that a member of greater dimension is more economical to use, owing to the greater allowable fibre stress.

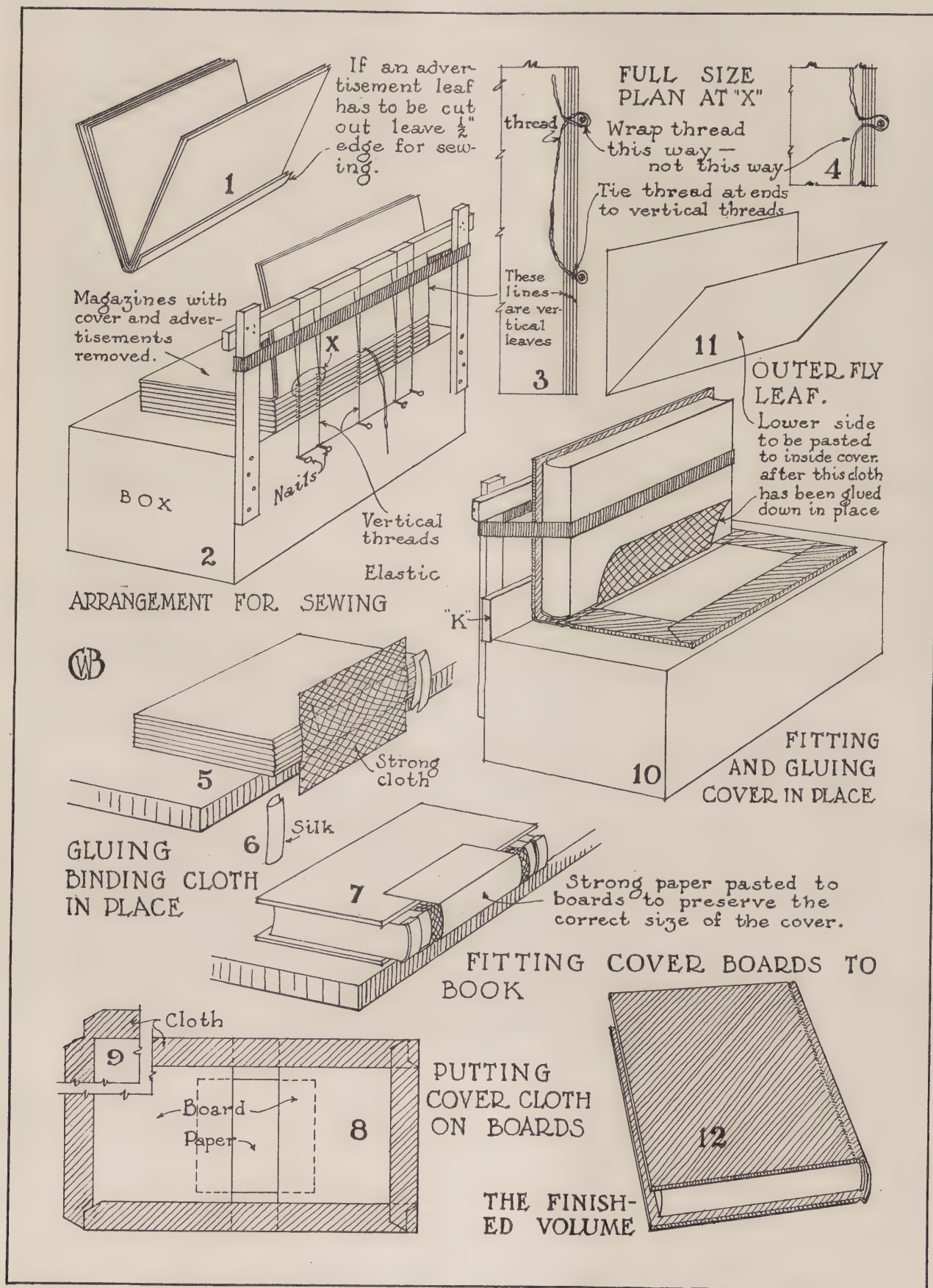
Figure 3 shows a marble and stone setting drawing for the wall treatment of an entrance hall. This particular shop drawing was prepared at the architect's office, by the subcontractor's expert, to facilitate the work. Note how clearly each stone is figured and lettered for its position in the executed work. The architect checked this drawing, during the progress in preparation, allowing for clearances, size of stones, location of joints, etc. The work is now in process of fabrication at the stone shop or yard, and from the first saw cut of the various stones to the final finish, cuts, listing, transportation and setting in place at the building, the stones and pieces are all identified by their numbers and positions determined on this drawing.

Figure 4 shows a shop layout of an elevator door front, metal bucks, doors, guide rails, overhead construction, grounds and anchors. Most careful attention must be given in checking work of this character; clearances between the elevator car and door saddles; how the work will fit in with the enclosing walls; to see that the doors are of proper width and have proper slide. The checking of work of this nature requires considerable knowledge of the mechanical functions involved. The elevator front must co-ordinate with openings on all the floors, fastening to the steel construction, design of doors, etc.

Figure 5 shows a stone setting drawing, necessary for the erection of a large banking house. Observe how the stones have to be checked out to allow for the structural steel, anchors of stones provided, bedding and bearing of the various stones, stones requiring special models for ornament. Each set of typical stones is clearly lettered and special stones individually picked out. This drawing shows an excellent example of how a steel structure is clothed with stone work. It will be seen what careful checking is necessary in order to have all the stone

(Continued on page 63)

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Diagrams Showing How to Bind Magazines at Home. See Text Beginning on Page 50.

HOW TO BIND YOUR PENCIL POINTS

BY C. W. BRANSON

WITH very little trouble or expense you can convert your PENCIL POINTS into attractive and substantial bound volumes. There are probably a great many readers of this journal who fail to get the maximum amount of good from their back numbers of their magazines because of the inconvenience of finding just what they want whenever they wish to refer to a plate or an article. There is not always time enough, especially in the drafting room, to look through several loose copies one after another until the desired information is found. Hence it often happens that the back issues of the magazines are piled up in a more or less neat pile and their contents forgotten.

Placing the separate copies in a binder will help to some degree; but temporary binders are somewhat clumsy and, the edges of the magazines being uneven, each copy must be taken separately and leafed through instead of spinning the leaves as is possible with the trimmed edges of a bound volume. For this reason the binder, while it preserves and keeps in order the various copies, does not satisfactorily solve the problem of convenient and speedy reference. The best and most effective way of keeping PENCIL POINTS always ready for handy reference is to bind the volumes in regular book form.

It is not so difficult or tedious to bind a book as many suppose and nothing but the simplest, home made apparatus is required. Nor does it take a great deal of time. It can be done easily in three or four evenings at home without hurrying—and it is best not to hurry too much on your first attempt. Twelve copies make a nice sized volume, though, if the advertisement sheets are removed, twenty-four copies will not make too large a book. The covers should all be removed and, if desired, the sheets containing advertisements only on all four pages may also be removed. Care should be taken that some of the text matter is not included in some of the advertisement pages cut out. If a sheet contains one advertisement leaf and one text leaf the advertisement leaf may be cut out leaving a half-inch margin for sewing the other half in place, as shown on the accompanying sketch (Figure 1).

Next arrange a box about 12 in. x 12 in. x 15 in. or larger, upside down, with two upright sticks supporting a cross stick as shown in Figure 2. Five nails are then driven into the side of the box in a row about nine inches long, with the two outside nails at each end about $1\frac{3}{4}$ in. apart, making the center nail about $2\frac{3}{4}$ in. from either adjacent nail. The heads are left projecting a half inch or more. Next several (about 4 or 6) strands of heavy white linen thread are tightly stretched vertically between each nail and the

horizontal stick above. Now thread a stout needle (a small darning needle does nicely) with a thread about four feet long, doubled. Tie the ends to one of the end vertical strands and you are ready to sew.

First you sew on the fly leaves. A sheet of white paper (cold pressed drawing paper is excellent) the size of the magazine when folded once gives you the size of two fly leaves. Lay the folded edge against the vertical threads on the box, care being taken that the end threads are about the same distance from their respective ends of the fly leaves. It is well to lay a couple of sheets, removed from the advertising section, under the fly leaf for protection. These should not be sewn, but will temporarily be held in place by the glue when the back edge is glued. They should, of course, be removed before putting on the cover. The top fly leaf may be held up against the vertical threads, out of the way, by a piece of elastic—a yard of garter elastic from the ten cent store serves the purpose—stretched over the two vertical sticks as shown in Figure 2. Now with your needle draw the thread through the paper right at the crease of the fold and up opposite the next vertical threads, draw it back again, turn it around the vertical threads as shown in Figure 3 (avoiding the method shown in Figure 4) then back through the paper again and on to the next vertical threads in the same manner. The thread that has been sewn should not be left loose but should be kept tight as you go along. On coming to the end vertical threads sew through as before, draw thread up tight and tie a knot around the vertical threads to hold the thread tight. This is easily done with the needle. The fly leaves are not sewn in place. Remove the elastic and allow the vertical leaf to lie down flat on the box.

This done the *last* number of the magazine is laid down on the fly leaves, face up, with the back edge against the vertical threads as in the case of the fly leaves. Open the magazine in the center and hold the top bunch of leaves up against the vertical threads with the elastic, as was done with the upper fly leaf. Now, without untying the knot around the vertical threads where you finished sewing the fly leaves, sew through the magazine sheets exactly as was done with the one fly leaf sheet—wrapping around each set of vertical threads as before until the opposite end is reached. Here tie the thread as before to the end vertical threads and, with the next number of the magazine in order, continue sewing until all the numbers are sewn in place. When renewing the thread in your needle always tie the new thread to the old. A good way to do this is to draw the old thread up tight and tie

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the knot at and around the nearest set of vertical threads. The upper sheet of fly leaves is sewn on last of all, in the same manner, the thread tied securely to the end set of vertical threads, when the sewing is completed. Place some advertisement sheets over this for protection but do not sew them in place. Then put a weight on top of this to hold the magazines firm and brush a good coat of glue over the back clear out to the edges on all sides. Next carefully cut the vertical strands of threads leaving each end about 2 in. or $2\frac{1}{2}$ in. long and fold these ends back into the glue and brush glue well over them. Now press a piece of stout denim or other strong cloth about 7 in. by 9 in. against the glue as shown at Figure 5. This cloth should be well secured to the backs of the sewn magazines as it is used to hold the back on the volume (to avoid confusion we will call it the "binding cloth"). Next a small piece of colored silk or other attractive looking cloth is folded as shown in Figure 6, glued together, and placed with the folded edge projecting not more than $1/16$ in. beyond the edge of the volume and glued in place. This piece of cloth will show at the top and bottom edges of the finished volume. Now leave in this position until the glue is thoroughly dry—over night at least.

When the glue is dry the volume should be taken to a paper dealer, or some establishment where they have a paper cutter, in order that you may have the edges trimmed smooth. While there get some bookbinder's board and bookcover cloth. The board should be hard and stiff and the cover cloth should be heavy enough to be durable, as the volume will receive more or less hard usage in the drafting room.

The board should be cut to a size that will project $\frac{1}{8}$ in. at top, front and bottom of the volume but be $\frac{1}{4}$ in. or $\frac{3}{8}$ in. from the back. Figure 7 shows how to fit the boards to the volume. A strip of strong wrapping paper is pasted to the boards but not to the book.

When the paste is dry the boards are removed and laid on the inner side of the cloth and a pencil line is drawn around the edges. Remove the boards and cut and notch the cloth as shown in Figure 8 at detail 9. Now brush a coat of thin glue on the back of the boards, including the paper, and all over the inner side of the cloth. Replace the boards on the cloth where the pencil lines indicate, turn the cloth and boards over and press out any wrinkles and then fold the edges of the cloth over on the inside of the boards as shown in Figure 8. Wipe off any surplus glue that is beyond the edges of the cloth on the boards.

You are now ready to fasten the cover on the book. First, remove the extra sheets that were put on the outside when sewing to protect the volume and which have been held in place with glue only. Then fit the back on the book carefully, seeing that it is straight and that the projection of the edges is the same all around. Now set the book on the box used for sewing as shown

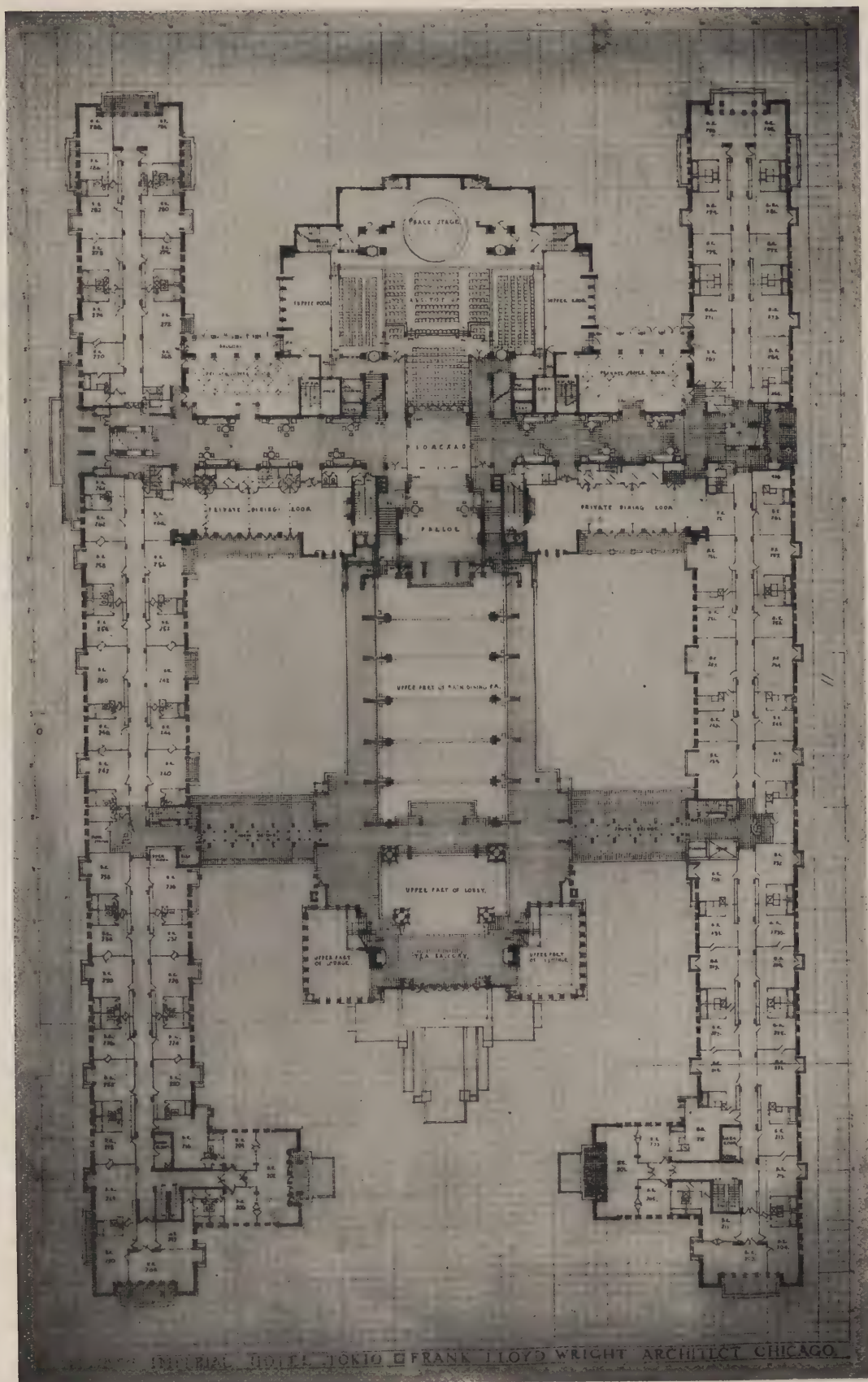
in Figure 10, place a small board as shown at "K," lay one cover down flat and stretch the elastic across to hold the rest of the volume firm. Then brush a good coat of glue that has not been thinned on the board under the binding cloth. Brush it well back into the corner, but not under the edge of the volume. Then lay the binding cloth down on this, smooth it out and see that all parts of it stick. When this is done have the outside fly leaf sheet ready (a sheet of stout brown wrapping paper is suitable, or drawing paper may be used) folded as the other fly leaves were and trimmed to the size of the trimmed magazines—see Figure 11. Brush a coat of thin glue all over the surface of the cover which is lying flat on the box and bring the glue up on the original white fly leaf for about $\frac{1}{8}$ in. along the bottom edge. Now carefully fit the cover fly leaf in place against the vertical book, have the folded edge well back in the corner made by the book and the cover, and then lay the outer leaf down into the glue and smooth out. This should be on straight, leaving an even cloth margin on each edge of the inside cover. Wipe off all surplus glue with a clean, damp rag, remove the elastic band and shut up the cover. Turn the book around and lay the other half down on the box and proceed exactly as was done for the first side.

This finishes the binding. Remove the book carefully and lay it down flat. See that the back of the book fits snugly up against the back of the cover and weight it down and leave it to dry. If twenty-four copies were used and several advertisement sheets cut out the back may be slightly thicker than the rest so, when putting a weight on it, let the edge project slightly beyond the table as shown in Figure 7. The book should be left this way for a day to allow the glue to dry thoroughly. Then remove the weight, lay on a table, open the front cover carefully and press out flat. Turn a few pages and press this out flat and continue in this manner to the back of the book. This will prevent "breaking" the back at any one place, will allow it to lie open flat anywhere and will help it to hold its shape.

A cover design more or less elaborate may be drawn out on the front cover with a white pencil and then traced in black, waterproof drawing ink which will add greatly to the appearance of the volume. It should contain the name of the magazine, of course, and the year date or dates of the volume. The owner's name is not inappropriate on the cover, if not too conspicuous.

The author has bound several books in this manner, including the 1921 and 1922 copies of PENCIL POINTS in one volume, and has always found the results very satisfactory. Aside from the practical advantages of having the magazines bound in this way there is a certain satisfaction in possessing volumes that you yourself have bound—and there is a great deal of pleasure to be obtained from the occupation of binding the volumes.

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*Main Floor Plan. Imperial Hotel, Tokyo.
Frank Lloyd Wright, Architect.*

HOTEL ARCHITECTURE FROM A HOTEL MAN'S VIEWPOINT PART III

BY ROY CARRUTHERS

This is the third installment of a serial article which Mr. Carruthers, who is Managing Director of the Waldorf-Astoria Hotel, is telling what are the practical requirements in hotel design from the hotel man's standpoint. Mr. Carruthers will discuss design character, planning and equipment.—Ed.

RESORT hotels present a problem in planning that is different in many ways from the problem of planning a commercial hotel or a hotel intended largely or entirely for permanent guests.

People require the atmosphere of a home in a resort hotel for usually their stay is of considerable duration and they like to go back to the same resort and the same hotel year after year. Everything must be done to make the resort hotel home-like. Also the resort hotel may be regarded as a large club for these hotels have in conjunction with them such features as golf links, tennis courts, rooms for dancing, etc. In many of these hotels there is an assistant manager or a hostess whose duty it is to arrange for and preside over the social events so necessary to make the stay of the guests at the hotel pleasant. The home and club features are characteristic of all successful resort hotels, though these houses vary from those of relatively small size to the enormous hotels such as the Royal Poinciana at Palm Beach, which accommodates fifteen hundred or more guests. One of the most talked of hotels of this type is small, El Mirasol at Santa Barbara, the nucleus of which is the old Herter residence which was turned into lounges, parlors, etc., while in the grounds around the house

were built three and four room cottages in the bungalow style arranged about a plaza. It is one of the most artistic as well as one of the most delightful of places. The Everglades Club at Palm Beach is also comparatively small and is most unusual and exclusive. In architecture and furnishing it is distinctive. It has a private golf course and other club features which are among its chief attractions. Another comparatively small hotel that has become successful through its special features is the Samarkand at Santa Barbara, California. The idea expressed in the Samarkand is to combine the features of a stay in a private home with the advantages of residence in a hotel and the added attraction of an exotic atmosphere supplied by a dignified architectural treatment of Persian inspiration.

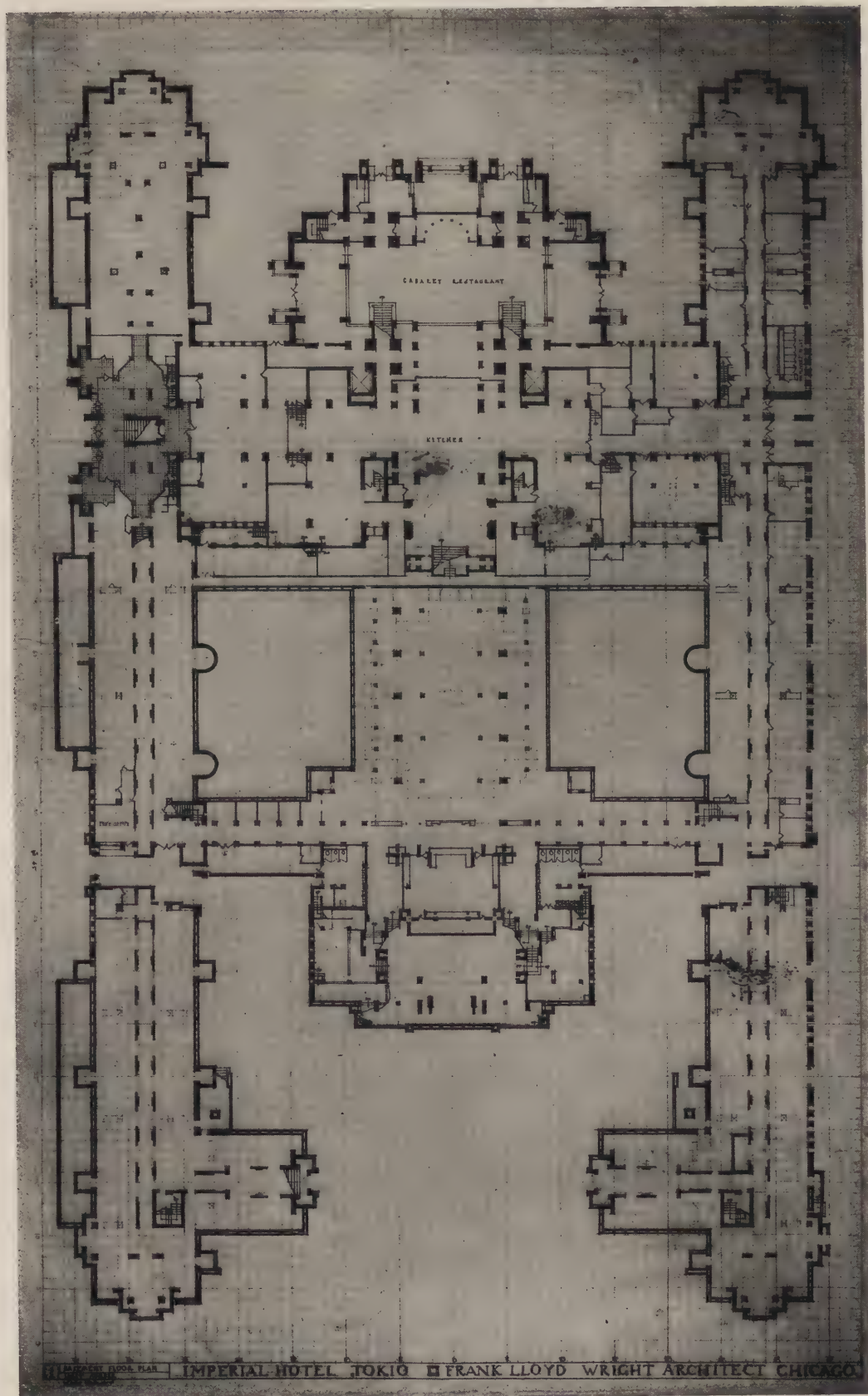
I have chosen three hotels that are neither very large nor very small as examples for a further discussion of the planning of resort hotels. These are widely separated, are different in design character, and all have certain marked characteristics in common. They are The Imperial Hotel at Tokyo, Japan, The New Colonial Hotel at Nassau, The Bahama Islands, and The Bon Air-Vanderbilt at Augusta, Georgia.

The main characteristics of this type were pointed out in the first part of this article which appeared



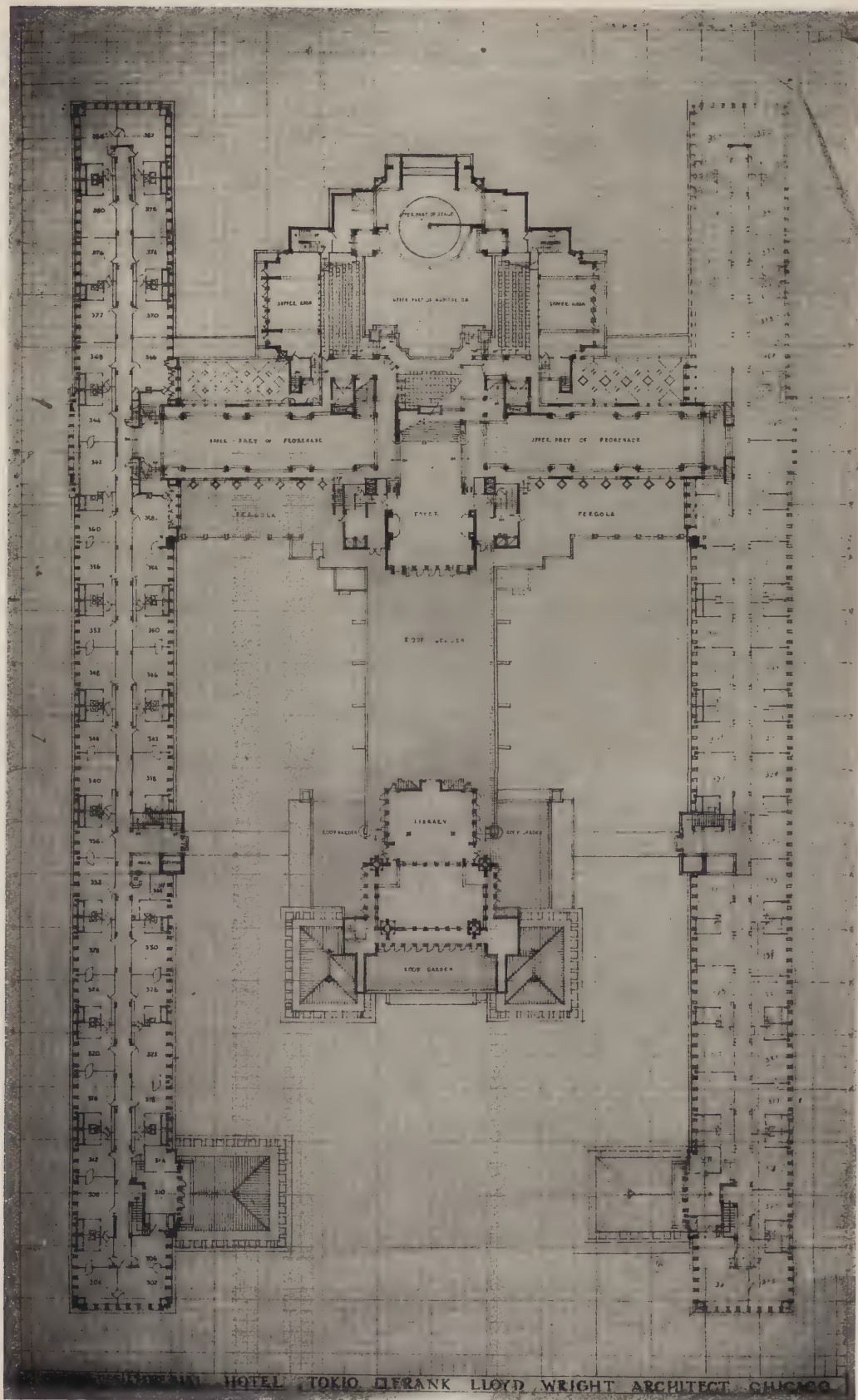
*General View of The New Colonial Hotel, at Nassau, Bahama Islands.
Kenneth M. Murchison, Architect.*

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*Basement Floor Plan. Imperial Hotel, Tokyo.
Frank Lloyd Wright, Architect.*

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*Loggia Floor Plan. Imperial Hotel, Tokyo.
Frank Lloyd Wright, Architect.*



Portion of Third Floor Plan, The New Colonial Hotel, Nassau, Bahama Islands.
Kenneth M. Murchison, Architect.

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in the June issue of this magazine. It is my purpose in this issue to go more fully into the matter of the practical requirements in planning of resort hotels, taking as examples for discussion three recent hotels—each excellent in its way and suited to its locality, and all widely separated.

These hotels are The Imperial Hotel, Tokyo, Japan—The New Colonial Hotel at Nassau, The Bahamas—and The Bon Air-Vanderbilt Hotel at Augusta, Georgia.

A photograph of The Imperial Hotel at Tokyo appeared in the June issue. In this issue are shown reproductions of the plans of the three lower floors.

At the outset it is well to recognize that The Imperial Hotel of Tokyo is not only a tourist hotel, but has combined with its accommodations for tourists very elaborate and especially well planned facilities for handling social functions. This is a very important feature of the service this hotel renders, for it provides a suitable and convenient place for holding the many social functions and for the less formal entertaining incident to the official and business life of the capital.

So we have here two interlocking sets of requirements. As a hotel for transient guests it has not only the advantage of an interesting and unusual exterior design, but a type of plan that adds to its interest and charm. By referring to the plan on page 52, it will be seen that the bedrooms are arranged in double rows with a corridor between, and that the wings are so widely separated that all of the rooms are in truth outside rooms. It will be noted also that the bathrooms are in all cases outside rooms. This is quite the reverse of the growing practice in the planning of commercial hotels where, as was mentioned in the July issue of this journal, inside bathrooms are becoming the

rule. In favor of the outside bathroom for a resort hotel, it may be said that since the same restrictions are not placed upon the area of the plot that arise from the high cost of land in cities, the resort hotel usually spreads over much more ground and is correspondingly fewer stories in height than the commercial hotel providing the same number of rooms. This being the case, it is desirable to make the courts as wide as possible and the wings of the hotel narrow. Using outside bathrooms placed between the bedrooms helps in the accomplishment of this purpose. Most travelers find the inside bathroom entirely satisfactory in a city hotel, but there is a feeling that is perhaps well-grounded that the same people when stopping at a resort hotel prefer the impression of light and air conveyed by an outside bathroom.

Referring to the basement floor plan on page 54, it will be seen that the kitchen of The Imperial Hotel at Tokyo is centrally located in relation to the main dining room and the private dining rooms on the floor above and to the cabaret restaurant which is just back of the kitchen and at a somewhat lower level. Depressing the kitchen in this way has made it possible to place the theatre on the main floor level at the head of the main axis and with its entrance from the Grand Promenade which crosses this axis at right angles and is one of the main features of this hotel.

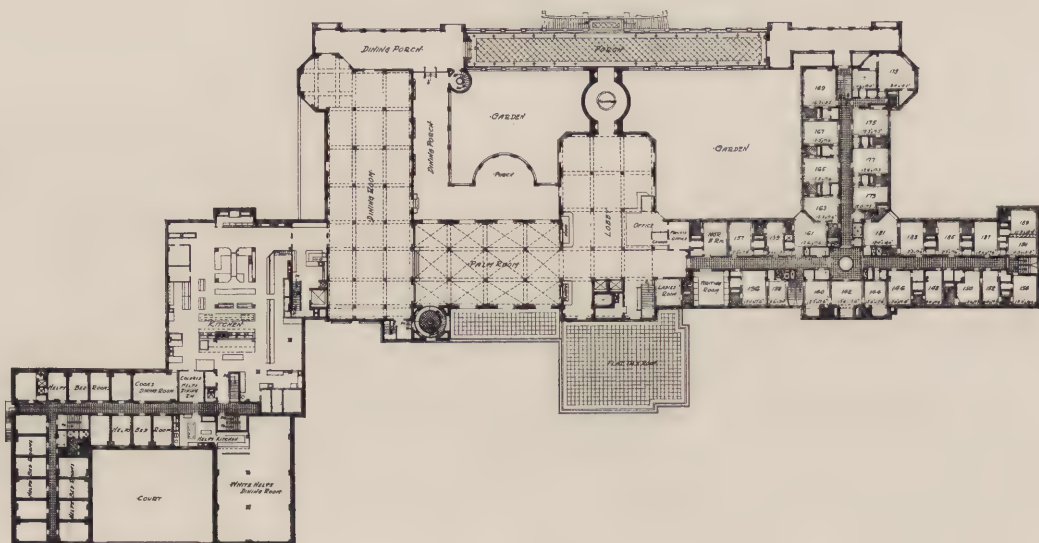
It is also to be noted that further means of crossing from side to side of the hotel are provided by the north and south bridges at the main floor level. The main entrance of the central portion is so planned and is of such architectural character that it is hospitable and impressive and has the gala spirit appropriate to the purpose.

(Continued on page 62)

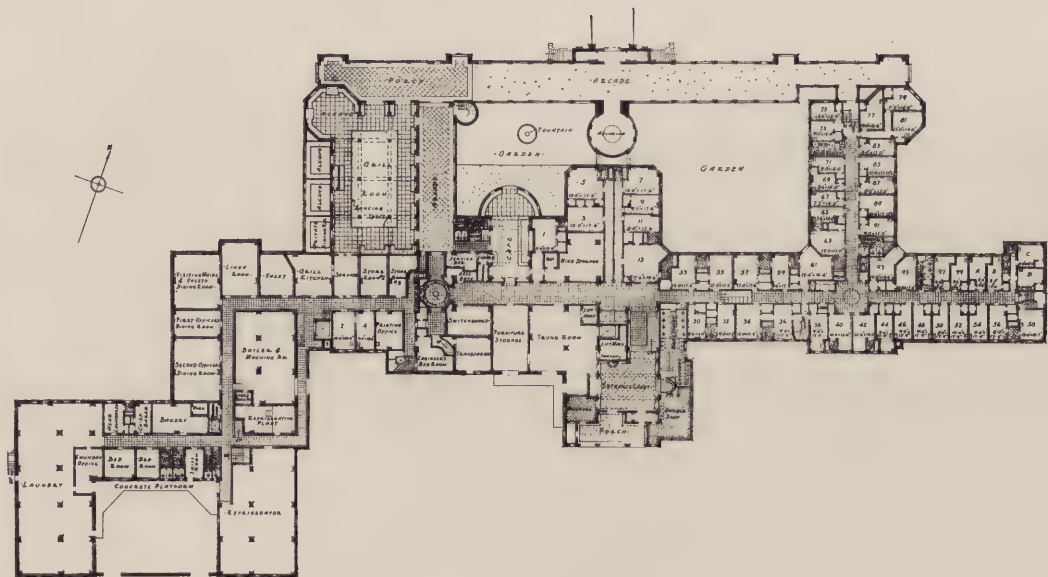


The Bon Air-Vanderbilt Hotel, at Augusta, Georgia. Willis Irvin and McKim, Mead & White, Associated Architects.

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First Floor Plan.

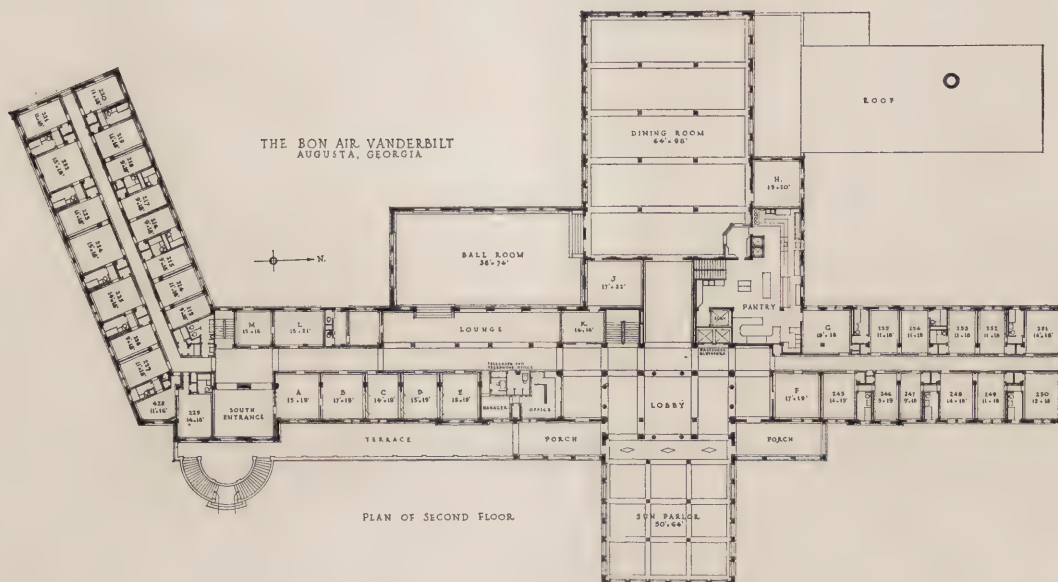


Ground Floor Plan.

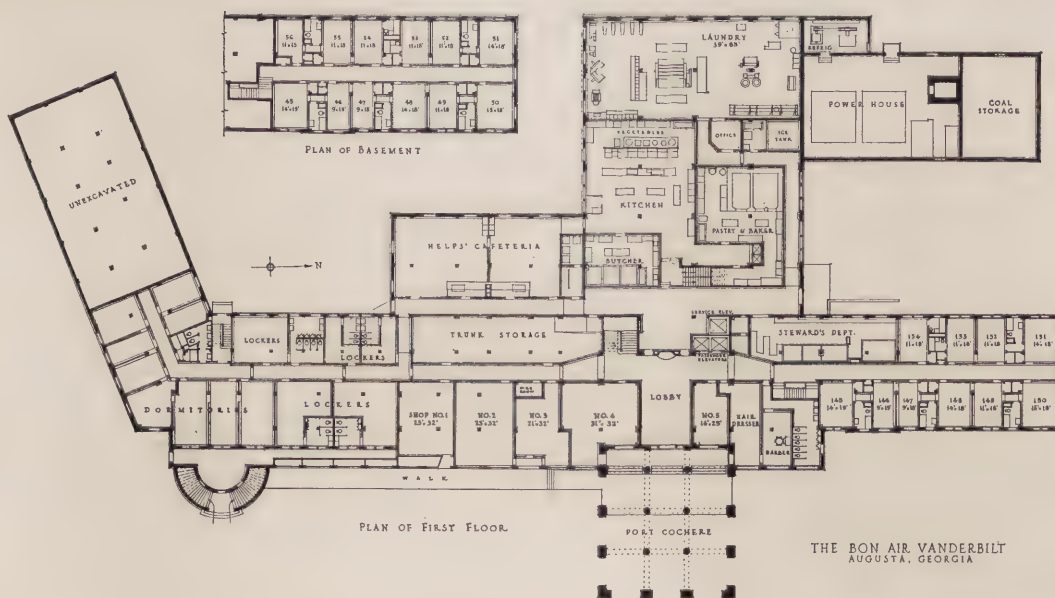
The New Colonial Hotel, Nassau, Bahama Islands.

Kenneth M. Murchison, Architect.

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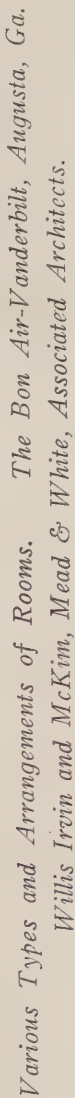
Plan of Second Floor.



Plan of First Floor.

*The Bon Air-Vanderbilt, Augusta, Ga.
Willis Irvin and McKim, Mead & White, Associated Architects.*

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AMERICAN ACADEMY IN ROME.

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Frank P. Fairbanks, Professor in Charge, School of Fine Arts, we quote the following:

In the past month we held our eighth Annual Spring Exhibition. The School of Fine Arts "hung" about eighty works. On the 16th of the month the King of Italy officially opened the Exhibition. He was received by the American Ambassador and his staff, the Director and faculty of the Academy. After the simple formality of receiving the students he spent three-quarters of an hour viewing the works of both Schools. One or two works by Manship, the project for the Thrasher-Ward memorial, and a publication by Professor Frank, as well as the new Japanese acquisition in our Museum, attracted the special attention of the King.

On the afternoon of the 17th the public opening of the Exhibition took place beginning with a lecture on Italian Gardening and its Relation to the Profession of Landscape Architecture, by Ralph E. Griswold, landscape architect. This was followed by the rendering of a program of original compositions by the Fellows in the Music Department. Hanson and Thompson conducted the orchestra from the Augusteo; Sowerby played one of the two piano parts of his own Ballade.

The cortile was temporarily covered by canvas to provide against the exigencies of the weather. A platform for the orchestra was erected at the south end of the cortile and seats were arranged for about 500 persons.

Salvatore Lascari, former Fellow in painting, has returned to Rome to prepare cartoons and execute mosaics in co-operation in some work for Mr. Blashfield. Because of his inability to procure a studio of adequate height for his thirty-foot cartoons we are allowing Lascari temporary use of one of the unoccupied sculptor's studios. Thereby we are also profiting by his experience in fresco painting, which he is offering generously for the work which Prof. Faulkner is doing in the cortile.

Of the work of the men, Griswold has completed his academic requirements and will shortly start on his final tour of travel north through Italy, to France and England, until his final sailing at the end of September.

Smith, senior architect, is busy with a thesis on his Temple of Zeus at Olympia, developing full size details and laying out his work on the Villa Catena.

The news of the award in sculpture to Alvin Meyer was very welcome out here. Meyer is a modest fellow and serious worker with an excellent feeling for decoration in his work. He has been helping Manship on some of his things and is occupying Manship's studio while carrying on some of his own projects.

Mr. Walter H. Rothwell, Conductor of the Philharmonic Orchestra of Los Angeles, in a letter to Howard Hanson, writes regarding a cycle of concerts of the work of American composers, "Your symphonic Poem had much success and personally I consider it the most important work we did on the program."

LIFE DRAWINGS BY STUDENTS.

TWO figure studies from the annual exhibition of students' work at Pratt Institute, Brooklyn, N. Y., are illustrated in this issue.

The drawing reproduced below is by Miss Ruth Harper who made it as part of her work in the Second Year Costume Illustration course under the instruction of Lewis Palmer Skidmore. It is one of the drawings made primarily for the purpose of rendering the costume designer more conversant with the human figure. Miss Harper's drawing shows extraordinary ability both in artistic perception and in drawing. It is much more than a mere study of the model and has charm. Miss Harper is now continuing her art studies in France, having sailed shortly after the closing of the school year.



Figure Study by Miss Ruth Harper.

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On this page is reproduced a drawing also by a student at Pratt Institute. This is a group of figure studies by Miss Ruth Harris, a third year student in General Art, under the instruction of Frederick Van Vliet Baker. These quick action sketches are made for the purpose of making the eye of the student more rapid in seizing essentials, and to improve the faculty of expressing action. Ten minutes or so are given to the drawing of each figure. This work supplements drawing of a more careful character, in which several hours are allowed for a single pose, and work in modelling from the figure.

HOTEL ARCHITECTURE FROM A HOTEL MAN'S VIEWPOINT.

(Continued from page 57)

The New Colonial Hotel is another well-planned hotel of the resort type. Here we find the same comparatively narrow wings with bedrooms arranged on either side of a long corridor and outside bathrooms.

A feature that contributes to the comfort of guests is the type of bedroom door used. Each of the doors has a large panel filled with louvers, permitting the circulation of air through the rooms and at the same time providing the necessary privacy. This opening can be closed by a hinged panel which swings into the room.

Ground floor and first floor plans of this hotel are shown on page 58 and a general photographic view is to be seen on page 53. This hotel is so planned that a view of the ocean can be had from most of the rooms. A feature of the plan designed to meet the requirements of the majority of the guests is found from the fact that there are a great many suites consisting of a double room with an adjoining single room and bath. With each room is a large closet in which may be accommodated a wardrobe trunk. There are two public bathrooms on each floor, located near elevators for those guests who arrive at the hotel in the morning and must wait for their rooms. This arrangement may be seen clearly in the portion of the third floor plan reproduced on page 56.

The kitchen is on the first floor adjoining the main dining room, from which open spacious dining porches and a large palm room. The palm room in turn adjoins

the lobby. This arrangement provides very effective vistas through the principal rooms. The grille room is on the ground floor.

As was mentioned in a previous installment, it is important always to so plan a hotel that the building may be expanded without the necessity for tearing down much of the original work. In the case of the New Colonial the architects have made provision for the building of additional rooms in such a way that the principal rooms will not have to be disturbed in altering to keep pace with the increased capacity of the hotel.

One of the interesting minor features of this hotel is the lobby through which bathers reach the beach from the hotel. The walls here are decorated with under-sea pictures and there is an aquarium eight feet in diameter.

In the plans of The Bon Air-Vanderbilt Hotel we once more find the rooms arranged in a double row along the corridor and outside bathrooms in general. On page 60 will be found plans of bedroom floors showing both the typical arrangement where baths occur between the rooms and the special arrangement adopted where baths occur at the ends of rooms.

Here the kitchen is directly under the main dining room and the entrance is through a port-cochère at the ground or first floor level. This port-cochère is spacious and with the sun parlor above provides an impressive entrance to the lobby at this level, from which the second or main floor is reached by elevators or by a stairway. The main lobby is lighted by windows above the level of the roof of the solarium. This lobby together with the lounge and solarium form an especially attractive group of principal rooms, with a vista over two hundred feet long from the solarium through the lobby to the extreme end of the main dining room. The lobby and solarium have wicker furniture and are decorated very attractively.

This hotel was opened in January, 1922, with 300 rooms. The work of making additions is now in progress under the direction of Willis Irvin and Warren & Wetmore, Associated Architects. The wing at the north is being extended to provide 100 additional bedrooms; a new dining room is being added to the west end of the main dining room and a lounge is being built at the south end of the ballroom.

(To be Continued)



Quick Action Sketches by Miss Ruth Harris.

PENCIL POINTS



ERNEST E. WEIHE

ERNEST E. WEIHE, winner of the Paris Prize of the Society of Beaux-Arts Architects in 1919, recently returned from his studies abroad.

Mr. Weihe was born in California and he entered an architectural office in San Francisco in 1907, doing office work part of the time and attending the classes of the San Francisco Institute of Art. Later he took up the work of the Beaux-Arts Institute of Design at the Atelier of The San Francisco Architectural Club under the patronage of Arthur Brown, Jr.

In 1912-13 he worked for the Panama-Pacific International Exposition Company under Edward H. Bennet, Jules Guerin, George W. Kelham and other well known members of the Commission. In 1913 he became connected with the office of Bakewell & Brown, and continued to follow the program of the Beaux-Arts Institute of Design. He was awarded the diploma in 1918, won prizes in the Warren, Loeb, Pupin and other competitions, also won a competition for a traffic solution for the foot of Market Street, San Francisco, including ferry buildings, boat landings, docks, etc., also won competition for design for Aquatic Park in San Francisco Bay, which is now being carried out.

Mr. Weihe worked under the criticism of Harvey W. Corbett and Maurice Prevot and won the Paris prize in 1919.

He worked for several months for Dennison & Hirons and sailed for Europe in 1920. He followed the courses of the Ecole des Beaux Arts in the atelier of MM. Laloux and Lemaesquier. He also did several competitions in the office of M. Paul Bigot and spent a great deal of time studying the latter's model of Rome.

Mr. Weihe travelled in France, Belgium, Holland, England, Italy, Spain and Switzerland, for the most part on a bicycle, making many sketches, two of which are reproduced on a plate page in this issue.

Mr. Weihe returned in May and is once more in San Francisco with Bakewell & Brown.

THE MAKING OF WORKING DRAWINGS.

(Continued from page 48)

work, as actually made from this drawing, fit the work. Experienced superintendence by the architect and the contractor is most necessary in order that the work may be properly set and trimmed, or to look out for the proper rigging, slinging and setting.

Figure 6 shows an interesting shop drawing covering part of a terra cotta façade for a banking building, erected in Japan. Note how all the pieces of terra cotta are clearly indicated. The types and sizes are noted. The anchors and bearings against the concrete structure are well indicated. In checking a drawing of this kind, perhaps the most important part to look out for is any deviation of design from the architectural drawings, figures of main openings and principal features. It is not so necessary to check for building up of, or securing of, the terra cotta work to the structural work. Due to their technical and expert knowledge the manufacturers are in the best position to foresee and provide for structural difficulties and overcome them.

Figure 7 also is a terra cotta shop setting drawing for a school entrance door feature. This is an excellent shop detail. The building up of the various pieces are clearly shown and numbered, also showing the relation to the tying into structural work, anchors shown, the columns are designed for their own structural support. Quite frequently a great part of the structural design of work such as this drawing illustrates, is left to the manufacturer. As a rule, when the work is in the hands of expert manufacturers, much should be left to their judgment and knowledge. They will follow the architectural details carefully for design and the architect need have no fear as to proper manufacture and structural strength.

During the construction of the New York Public Library on Fifth Avenue, many of the shop drawings were prepared in temporary offices provided for the contractors near the architect's office. This was a great help both to the contractor's staff, who prepared the shop drawings and the architectural draftsmen. Consultations were frequently held, records of drawings and specifications were easily available and much sending to and fro of drawings between the contractor and architect was eliminated. This method of having shop drawings prepared in the architect's office, has since been worked out with good results and this form of co-operation between architect and contractor has been very successful.

PERSONALS

ALBERT SCHROEPFER, Architect, has removed his offices to the Foxcroft Building, 68 Post Street, San Francisco.

RUSSELL F. WHITEHEAD has removed his offices to 150 East 61st Street, New York.

WILLIAM C. FURER and WILLIAM POTTER have become associated under the firm name of Furer & Potter for the general practice of architecture and architectural engineering with offices in the Hawaiian Trust Building, Honolulu.

EDWARD C. NOWERS BRETT has opened an office for the practice of architecture at 502 Slavin Buildings, Pasadena, California.

LESTER B. EDWARDS has become associated with Frost & Chamberlain, Architects, the firm now being Frost, Chamberlain & Edwards, 1006 Slater Building, Worcester, Mass.

CHARLES M. HART has removed his offices to the Park-Lexington Building, 247 Park Avenue, New York.

THE SPECIFICATION DESK

A Department for Specification Writers

SPECIFICATIONS FOR CRITICISM.

ACTING on the suggestion of one of our readers, Mr. M. N. Nirdlinger of Nirdlinger and Marlier, Pittsburgh, we have secured a set of architect's specifications for a brick and hollow-tile residence and we are printing this set of specifications in order that they may be criticised by our readers. Last month we printed the fourth installment and in this issue we continue. The object in doing this is to provide material for a discussion that will be helpful to all who have to do with the preparation of specifications by showing up the weak points in this set of specifications.

You are invited to join in and help rip up these specifications. We are withholding the name of the architect from whom we borrowed these specifications and he has entered into the spirit of the thing so you may feel at liberty to criticise them as severely as you like. We hope that you will also present many suggestions for improvement. The good resulting from this discussion will be in proportion to the number of men who join in with criticisms and suggestions, so we ask that you do not depend on the other fellow doing it but write us yourself, then the thing will be a success. Here is another portion of the specifications—let's have your criticism.

CARPENTER WORK.

(Continued)

BREAKFAST ROOM CHINA CLOSETS:

China closets at breakfast room will be built of design shown and per full size details, which includes a moulded bottom shelf with apron under same, moulded architrave, stiles, $\frac{7}{8}$ " doors and moulded shelves. The lining for above china closets to be made up of yellow pine beaded boards and it will be noted that the face of china closets is flush with plaster wall below china closets. The above china closets to be well framed and glued and to be assembled at the mill ready to set in place at the building. Loose moulds to be provided on above china closet doors which will be set in place after is installed.

CUPBOARDS, CLOSETS, ETC.:

Cupboards, closets, etc., including drawers under kitchen sink drain board, to be built where shown on plans and as per preliminary detail sheet and as per full size details. Said cupboards, closets, etc., will have drawers, shelves, clothes poles, etc., as called for.

Doors in all cases to be $\frac{7}{8}$ " thick and are to be provided with loose wood moulds where glass panels are called for. Shelves to be $\frac{7}{8}$ " thick. Poles to be $1\frac{1}{2}$ " in diameter. Countertops of cupboards to be $1\frac{1}{8}$ " thick with moulded nosing. Above cupboards to be constructed in the most approved manner. Shelves shall be supported on metal pins, they to be made adjustable. All drawers to be constructed in the most approved manner. All metal pins to be furnished by contractor for mill work.

LINEN CLOSET HINGED FRONT CASE:

Case at second story linen closet to be built to a height of five feet consisting of shelves with hinged fronts, the fronts to be hinged at the bottom. At the five foot height above cases will have moulded counter-top. The case will be lined with flooring and will have baseboard continue across front. The above to be as suggested on drawings and per full size details.

CLOSET SHELVING:

All closets to be provided with the number of shelves

called for on drawings and with $\frac{7}{8}$ "x4" moulded clothes strip and $1\frac{1}{4}$ " poles.

CLOTHES CHUTE:

This contractor will figure on furnishing clothes chute per drawings and details. Doors are specified under heading of doors. Clothes chute to be lined its entire length with one width yellow pine boards or flooring which shall be properly braced affording a perfectly smooth surface inside. At basement this contractor will include receiving basket built up of $\frac{3}{4}$ "x2" material with space between boards sufficient for ventilation. Above will be clearly shown on full size details.

CELLAR PARTITIONS, ETC.:

Cellar partitions where marked on drawings to be built of yellow pine tongued and grooved flooring 3" on face with 1x3" surfaced pine at base, center and at ceiling. The strips will occur on one side only and will run around all door openings on both sides forming jambs for the doors. Coal bin partition will be lined on both sides of the 2x4" studding. Studding to be spaced 16" o. c. This contractor will include all closets in cellar as called for on drawings and will provide shelves, etc., as called for.

PAINTING AND GLAZING:

NOTE:

For kinds of woods used throughout building see drawings and pages 32 and 33.

This contractor will furnish all materials and labor necessary to complete the work included in this department of said building, in a workmanlike manner. All materials are to be just as specified with no substitution or adulteration. All materials are to be delivered at the building in sealed cans, and passed upon by the architect.

Examine all woodwork before first coating it, and if it is not in a suitable condition to paint or varnish as required, report to architect before first coating it and await his instructions. This contractor is to include the finishing of all woodwork done by the carpenter and mill work contractors, and this painting contractor must inform himself by reading their specifications also all metal and tin workers' specifications.

All pumice stone and oil and water used in rubbing must be thoroughly cleaned off. Also all spots, smudges or finger marks from woodwork that is to be varnished, before applying first coat; also all paint and varnish that gets on hardware, glass or other places where it is not intended. OO sand paper to be used where sand paper rubbing is called for.

Furnish white lead to carpenter who will put it on kitchen wood porch flooring at tongues and grooves as floor is laid.

The varnish, paint and enamel must be applied with suitable brushes, in a manner that will not show brush marks, and all painting and varnishing must be free from sags or runs, and must be smoothly and uniformly brushed out.

All nail holes and slight defects of interior finish are to be puttied up with putty, colored to exactly match the wood when finished. No oily rags or waste to be left in the building over night. Exterior ornamental iron work shall receive one coat of approved black iron paint at completion of the building.

Follow the work of the carpenters each day, shellac all knots and prime all finished woodwork, (unless it is specified to be stained) the day it is put in place. The window and door frames are to be primed at the shop or mill. The above priming coat to be composed of pure linseed oil and ——— white lead and dryers, using a larger percentage of oil.

(To be Continued)

PENCIL POINTS

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Basic Specification for Tile Work.—A most valuable document for all architects, draftsmen and specification writers covering the entire question of setting and laying tile of all kinds. Complete and detailed specifications for all types of work under all conditions; ample space for memoranda. 40 pp. 8 x 11. Associated Tile Mfrs., Beaver Falls, Pa.

Drafting Room Standards.—Architectural details covering all types of steel windows. 34 sheets drawn to scale, a folio of complete specifications and much other useful information. Truscon Steel Co., Youngstown, Ohio.

The Art of Home Furnishing and Decoration by Frank Alvah Parsons.—An attractive treatise on the subject, illustrated by a series of beautiful color plates. Full of valuable information and suggestion, with especial reference to the treatment of floors and decorative color schemes. 44 pp. 8 x 11. Armstrong Cork Co., Lancaster, Pa.

Elevator Signal Bulletins.—This series of bulletins covers complete flashlight signal system, flashlight annunciator system, signal systems for department stores and Loc-Drop annunciators. Complete technical data with illustrations, drawings, etc. 8½ x 11. Elevator Supplies Co., Inc., Hoboken, N. J.

Flintkote Booklets.—A series of nine convenient folders covering strip shingles, sheathing and building paper, slate surfaced roofing and other roofing specialties. Much useful information regarding the Flintkote line. The Flintkote Co., 88 Pearl St., Boston, Mass.

The Prevention of Heat Losses.—Treatise on the construction of exterior walls. Diagrams, sections and much useful technical data. Associated Metal Lath Mfrs., Edison Bldg., Chicago, Ill.

Atlantic Terra Cotta. Monthly Magazine for Architects.—Vol. 6, No. 2, illustrates and describes Palazzo del Consiglio, Verona, with supplement in color reproducing pastel sketch by H. V. K. Henderson of an example of early Italian polychrome terra cotta. Atlantic Terra Cotta Co., 350 Madison Ave., New York City.

Lighting Data.—Series of three bulletins covering the lighting of theaters and auditoriums. 6 x 9. 24 pp. Edison Lamp Works, Harrison, N. J.

Splices and Tapes.—Interesting booklet showing best method for making perfect splices or joint in electrical conductors. 8 pp. 6 x 9. The Okonite Co., Passaic, N. J.

The Water Supply for Swimming Pool.—Technical bulletin No. 500 covering the subject, blue prints, diagrams, etc., and complete technical exposition. 16 pp. 8½ x 11. Graver Corp., East Chicago, Ind.

Rolling Steel Doors.—Catalog No. 35, just off the press, covering completely subject of rolling steel doors for all types of buildings. Sections, diagrams, and complete data. 72 pp. 8½ x 11. J. G. Wilson Corp., 11 East 36th St., New York City.

Heating and Ventilating Data.—A 28-page book of blue prints showing Sturtevant apparatus in detail, floor plans, distribution of air ducts, location of equipment, symbols and other valuable data. Covers churches, factories, schools, theatres, offices and many other buildings. Ask for Bulletin 2272. B. F. Sturtevant Co., Hyde Park, Boston, Mass.

The Strength of Ordinary Brick Work.—Technical treatise by Rudolph P. Miller invaluable to architects, draftsmen and engineers. The Common Brick Mfrs. Assn. of America, 2121 Discount Bldg., Cleveland, Ohio.

Carborundum Anti-Slip Tile.—Illustrated booklet with sectional drawings showing application of Carborundum treads under varying conditions. 6½ x 8½. 24 pp. American Abrasive Metals Co., 50 Church St., New York.

Copper—Its Effect Upon Steel and Roofing Tin.—Scientific treatise on the subject showing exhaustive comparative tests of roofing materials. Fully illustrated. Specifications. Plates showing details for tin roofing and sheet metal work. 8½ x 11. 40 pp. American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

Creo-Dipt Stained Shingle Homes.—Portfolio illustrated. Forty-seven attractive homes where Creo-Dipt stained shingles have been used. The Creo-Dipt Co., Tonawanda, N. Y.

Ripolin Specifications.—Complete specifications showing methods of applying Ripolin Enamel to all surfaces. 12 pp. 8 x 10½. The Glidden Co., Cleveland, Ohio.

Hitchings Greenhouses.—Brochure just off the press. Frontispiece in colors and many attractive illustrations of small as well as large greenhouses, conservatories and a word about cold frames. Plans and layouts. 64 pp. 9 x 12. Hitchings & Co., Elizabeth, N. J.

The Stucco House.—Profusely illustrated brochure covering completely the subject of Portland cement stucco. Color plates, many engravings. Examples of architecture in which stucco is used. Full specifications as recommended by the American Concrete Institute's Committee on the treatment of concrete surfaces. 8½ x 11. 96 pp. Atlas Portland Cement Co., 25 Broadway, New York.

Doors for the Home and for the Public Library.—Two special bulletins covering modern metal equipment for these two classes of buildings. Entrances, elevator enclosures, stairs, halls and fire exits, corridor and communicating doors and doors for special uses are considered. Specifications and diagrams showing construction and suggestions for ordering. 8½ x 11. 16 pp. Dahlstrom Metallic Door Co., Jamestown, N. Y.

Olde Stonesfield Roofs.—Brochure with color plates illustrating artistic roofs and walks. Eighteen subjects. 5½ x 6½. The John D. Emack Co., 112 South 16th St., Philadelphia, Pa.

The Kelsey Systems.—Collection of six interesting booklets on the subject of heating and ventilation. Illustrated. Specification data. Kelsey Heating Co., Syracuse, N. Y.

Kyanize Measured Drawings.—A series of 12 plates of notable details of Colonial houses containing details of mantels, china-closets, main stairway, window and doorways. This collection of excellent types of architecture, measured and drawn by Edgar and Verna Cook Salomonsky, is very well presented on sheets 8 x 11, showing photographic illustrations, elevations, details and profiles, with dimensions. Issued by the Boston Varnish Co., Everett Station, Boston, Mass.

The Blue Book of Plumbing.—Catalog illustrated in color. 5 x 7. 450 pp. Trenton Potteries Co., Trenton, N. J.

Tudor Stone Roofs.—Attractive booklet on the subject of artistic slate roofing. Many attractive illustrations. 6 x 9. 24 pp. Rising & Nelson Slate Co., 101 Park Ave., New York City.

Brixment for Perfect Mortar.—Booklet with frontispiece illustrating residence designed by Mr. Charles A. Platt. Complete information regarding Brixment mortar. 8½ x 11. 16 pp. Louisville Cement Co., Louisville, Ky.

Color Harmony in Floors.—Booklet covering subject of floor treatment from entirely new angle. Maple Flooring Mfrs. Assn., 1082 Stock Exchange Bldg., Chicago, Ill.

The Minneapolis Pressure Regulator.—Leaflet No. 70. Describing and illustrating apparatus for control of pressure on vapor or steam heating systems and installations. 2 pp. 6½ x 10. Minneapolis Heat Regulator Co., Minneapolis, Minn.

Ventilation.—History of ventilation, complete engineering data, capacity tables, installation drawings and specifications for installing in various types of buildings. 8½ x 11. 72 pp. Moline Heat, Moline, Ill.

Mueller Tile.—Illustrated brochure of faience and Flemish Tile. Fireplaces, swimming pools and many exterior applications. 6 x 9. 36 pp. Mueller Mosaic Co., Trenton, N. J.

Elevator Door Efficiency.—Illustrated catalog showing various types of elevator doors, detail drawings, specifications, safety appliances, etc. 8 x 10½. 48 pp. The Peelle Co., Brooklyn, N. Y.

Corrugated Wire Glass.—Illustrated technical bulletin No. 8 covering the application of wire glass in various types of construction. Twenty full-page drawings of details with specification data. 8½ x 11. 44 pp. Pennsylvania Wire Glass Co., Pennsylvania Bldg., Philadelphia, Pa.

Poles Worthy of the Stars and Stripes.—Catalog covering the subject of flag poles for various uses. Diagrams showing best method of applying to buildings, etc. 4 x 9. 32 pp. The Pole & Tube Works, Inc., Ave. D and Murray St., Newark, N. J.

Supplies for Architects and Draftsmen.—Complete catalog of everything required in the drafting room. Revised prices. Instructions for ordering, etc. 6 x 9. 558 pp. Substantial cloth binding. F. Weber & Co., 1220 Buttonwood St., Philadelphia, Pa.

Chains. Catalog A 1.—Describing a complete line of sash chains, cable chains and various specialties and fixtures useful in modern building construction. Tables and other useful data. 24 pp. 6 x 9. The Smith & Egge Mfg. Co., Bridgeport, Conn.

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THE MART

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BACK ISSUES OF PENCIL POINTS. Will buy copies of November and December 1922 at 25c. each. Must be in good condition. This offer expires August 31, 1923. The Pencil Points Press, Inc., 19 East 24th Street, New York City.

THE SAINT LOUIS ARCHITECTURAL CLUB.

ACTIVITIES in the St. Louis Architectural Club have not ceased with the oncoming of warm weather.

Recently one hundred and five members were the guests of Mr. Edward G. Lasar, of The Lasar Manufacturing Company, when he gave a dinner at the Missouri Athletic Association, followed by a tour of inspection at the Company's plant at Sixteenth and O'Fallon Streets, where the guests saw the various processes in the manufacture of ornamental iron work.

Closely following that event was the national convention of The American Federation of Arts, which brought three days and nights filled with delightful speeches, receptions, automobile rides, and finally a banquet at the Hotel Chase.

On June 26th the Club members were guests at dinner of St. Louis Chapter, American Institute of Architects. The dinner was given at the Architectural Club's clubhouse, 514 Culver Way, where two exhibitions were hung—namely, the Birch Burdette Long Competition of 1922 and the exhibition from The Royal Institute of British Architects.

On August 1st the Club will take possession of the additional building at Washington Avenue and Culver Way, and at the present time plans are being formulated for its alteration and furnishing in time for the regular Club season which opens in October.



A NATIONAL DRAFTING ROOM REGISTRY

THERE never has been a central point or bureau in this country at which the interests of draftsmen identified with the building industry could focus. We purpose to establish and maintain such a bureau that will serve as a clearing house for all manner of information. It will, we believe, greatly facilitate communication between architects and draftsmen, and will also enable members of the drafting fraternity to reach their friends and acquaintances quickly in those cases where, because of numerous shifts from office to office and from one part of the country to another, they have temporarily lost track of each other. Letters addressed to us will be forwarded promptly. We have been called upon during the past year many times to locate individuals and have usually been able to forward letters by means of our subscription records.

The free employment bureau which we established a few months ago has proven to be very popular, both with architects and others seeking men of certain qualifications to do their work, as well as with the draftsmen seeking positions. We have been able in very many instances to bring the work and the worker together to the satisfaction and profit of both parties.

On page 72 of this issue of PENCIL POINTS will be found an invitation to all draftsmen, superintendents of construction, and specification writers identified with the building industries of America to register at this office. What we want now is a *complete* registry which will not only enable us to locate every man, but which will at the same time enable us, at least roughly, to classify the entire body of American draftsmen with respect to their training, experience and abilities. The form of registration card, which will be sent on application, provides briefly for the essential data regarding each registrant, and it is hoped that each card will be filled out carefully and, so far as may be, completely. No obligation or expense is incurred by those registering. Those who do not subscribe for PENCIL POINTS are just as welcome as those who do. If the registry is to serve its purpose, it is of course essential that we be promptly notified of changes either in address or status.

We hope that all those eligible to register will enter into the spirit of the movement in such a way as to make it a complete success. Draftsmen in architects' offices, designers, superintendents of con-

struction, and specification writers, architects not maintaining their own offices but employed by others, engineers and draftsmen in the employ of contractors or manufacturing firms identified with the building industry are eligible. Notify your friends who may not read this announcement and urge them to send for registry cards. Let's all get behind this idea and push it through with all possible speed.

In making this survey of our field, we have in mind the further thought that in various parts of the country local architectural clubs, including in their membership both architects and draftsmen, may with advantage be formed. Many of these groups are already in existence and are accomplishing much along both professional and social lines. A free interchange of ideas is possible in an atmosphere entirely different from that existing in the office, where things are proceeding at high pressure, and where there is little opportunity for the discussion of those problems and interests common to all. We have received many inquiries concerning the best methods for forming and conducting architectural clubs and we believe that when our registration is completed, we will have in hand definite data which will serve as a basis for the formation of additional units.

There has been unfolded to us during the past three years ample evidence that the younger architects as a group are vitally interested in all matters pertaining to self-improvement and it has been our pleasure in the pages of PENCIL POINTS to place at the disposal of men in one part of the country the ideas and methods of practical men located elsewhere. We believe that the work we have so far accomplished has, to a certain measureable extent, raised the standards of draftsmanship and general efficiency. In so far as we have been successful in this endeavor, we feel that we have rendered a genuine and valuable service to architects as well as to the draftsmen and others who work with and for them. However, we are not at all satisfied with what we have been able to accomplish along these lines, and we want to get in touch more directly with every individual in the field whose future in any way depends upon his ability and effort,—and that is true of all of us.

As the next move, therefore, in establishing an intimate and personal touch with every man in the field as outlined on page 72, we regard the National Registry as an essential step.

PENCIL POINTS

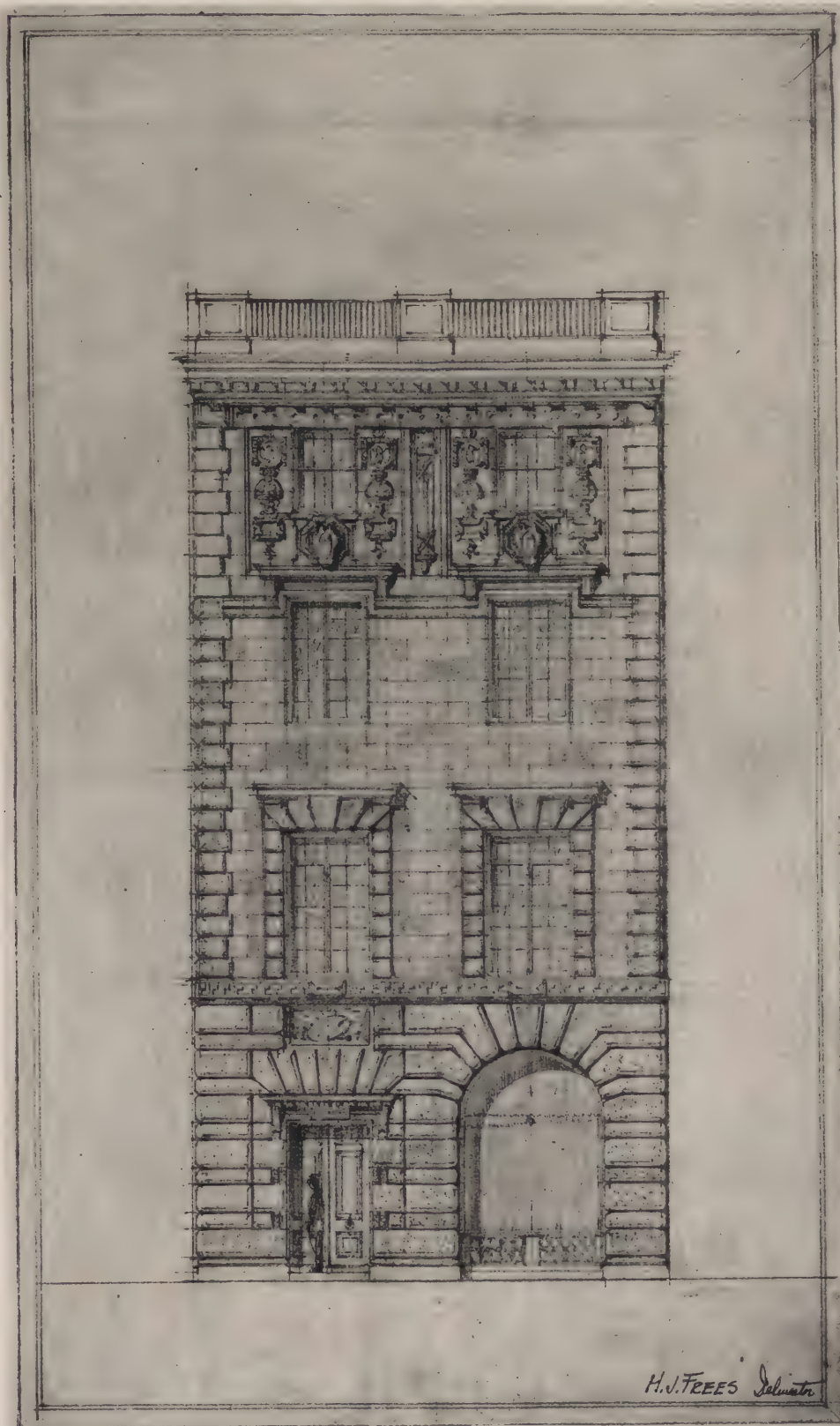


Figure 2. Designer's Study of Façade for Building for M. Knodler & Co.,
New York City. Carrère & Hastings, Shreve, Lamb & Blake, Architects.

THE MAKING OF WORKING DRAWINGS

PART V, THE DEVELOPMENT OF WORKING DRAWINGS FROM DESIGN STUDIES AND SKETCHES.

BY JOHN C. BREIBY

This is the fifth of a series of articles in which Mr. Breiby of the staff of Carrère & Hastings is giving a description of methods of making working drawings. In the May issue, he discussed the small-scale drawings. In the June issue he took up scale details. Full-size details were treated in the July issue, and in the August issue Mr. Breiby discussed Shop drawings, etc.—Ed.

THE will, the imagination, the power to reason and the power to feel emotions, are attributes of all men. Very few, if any, are endowed with an equal power and perfect balance of these four gifts. The will dominates some; the imagination others; again, reason will take the lead, or feeling may be uppermost. Organized society is governed by the collective attributes of individuals. These gifts are coequal in necessity to mankind. While all of these attributes are of equal importance, they are not of like character, and are exercised in different ways, though arranged in distinct order. First the will, to rule; secondly the imagination, for creative power; thirdly reason, for analytical work; and lastly feeling, or the heart governed by conscience. This thought may also be expressed in a somewhat different form, and perhaps with a different shade of meaning as follows: The will to do; the imagination to foresee; the reason for doing; and the feeling in which it is done.

Architecture should be the result of the perfect unity of these four gifts, the functions of which may be classified as follows: The imagination of the designer; the analysis or reasoning required for the working out of the many problems; the feeling of right or wrong, with reference to the execution of the work, or relationship of owner, architect and contractor; and the will or rule to decide what action is to be taken in making final decisions governing the work.

The practice of architecture is not the work of one man, even though a particular office is operated by the architect alone, without a drafting force or clerical staff. As has been stated before, the architect must rely upon the assistance from skilled workers engaged on the building, or in the fabrication of materials to be used in the construction thereof. A large percentage of architectural work is, of course, conducted by offices where the architect is designer, draftsman, specification writer and superintendent, and the result is often good; nevertheless, a balance of characteristics must be evident for the proper result. Larger offices have carefully composed organizations, in which each member of the organization has a particular task to perform. In such offices, the dominant attribute is readily observed, and the individual will generally be given, or find, the work to do, which his special gift most calls for.

In the history of man, outstanding figures and personalities are called to mind, shining like guiding stars or beacon lights, to light the way, and perhaps shape the destinies of individuals or collective mankind. In the history of architecture, such guiding stars have indeed shown the full value and shaped the destiny of architectural design and structure. The names of the foremost architects of the different ages are all well known.

The environments, modes of living, governments of nations and peoples, have all had their effect in forming particular habits and desires, and these habits and desires are directly expressed in all forms of art. Art, as expressed during the Tudor Period—however charming in its boldness (even to brusqueness)—would have been entirely inappropriate for the court customs and attire prevailing during the reign of Louis XIV of France. Likewise in these days of modernism, architecture and in fact all fine arts, to a great degree, express the commercialism which is so prevalent today.

This is a rather bold statement perhaps, though true. The thought of cost is ever present, space must be saved. Most architects must struggle to give the client as much as is possible, with the least expenditure. Architects very often forgive themselves by saying, "good enough, for I gave them the most for their money." "Good enough," is no excuse. This feeling of "good enough" for the money expended will inevitably result in disillusionments. There is so little good architecture in comparison with poor architecture, that it is, and should be, the solemn duty of every architect to strictly uphold the ethics of the profession, and to render the client what is best for the money. Many districts and communities are absolutely ruined beyond redemption by unscrupulous builders or promoters. Slapped-up houses are erected; factories are built without thought of line or refinement. Water fronts of cities are not considered with any thought of combining utility with beauty; even the water is polluted to a point of absolute unhealthiness. Fortunately city planners, engineers and architects are endeavoring to remedy these conditions, and their work will undoubtedly bring forth good fruit, in time to come.

All the above mentioned faults are directly due to the modern way of living and conducting business. It must be said, however, that the way of

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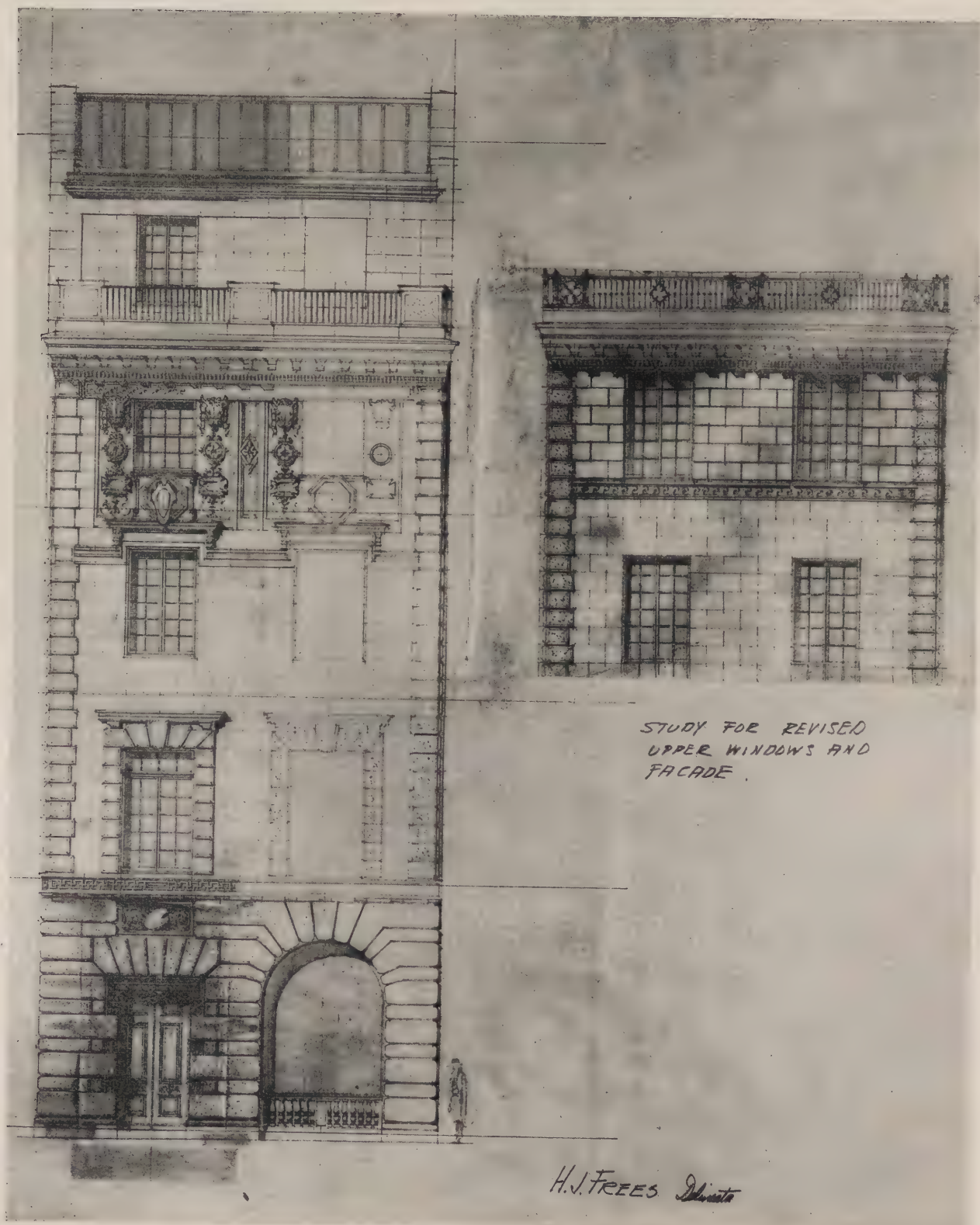


Figure 2. Development Study, at One-quarter Inch Scale, of Façade of Building for M. Knoedler & Co., New York City. Carrère & Hastings, Shreve, Lamb & Blake, Architects.

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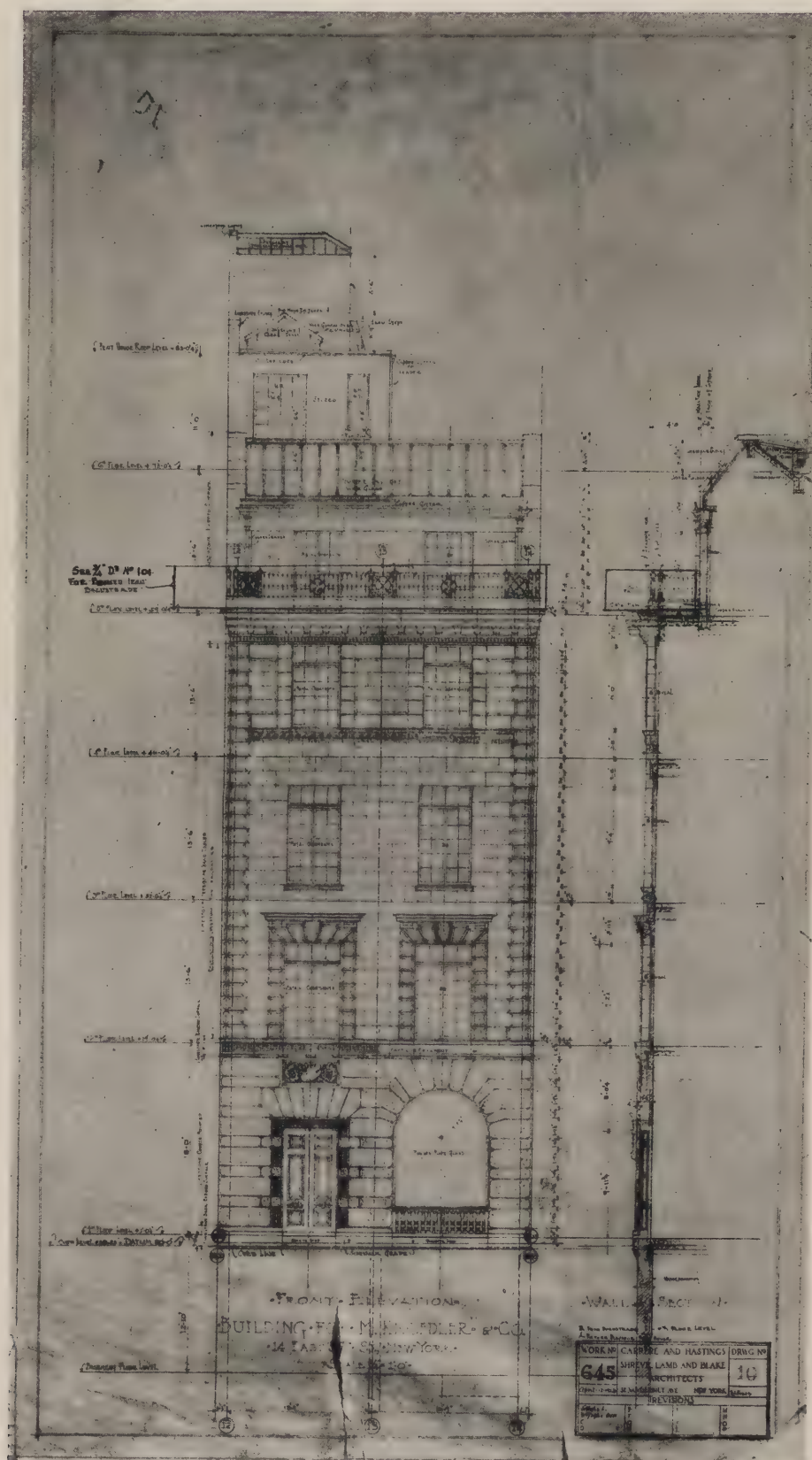


Figure 3. Working Drawing Fully Developed from Studies Shown in Figure 1 and Figure 2. Façade of Building for M. Knoedler & Co., New York City. Carrère & Hastings, Shreve, Blake & Lamb, Architects.

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Figure 4. Portion of Study Drawing at Three-quarter Inch Scale. Building for M. Knoedler & Co., New York City. Carrère & Hastings, Shreve, Lamb & Blake, Architects.

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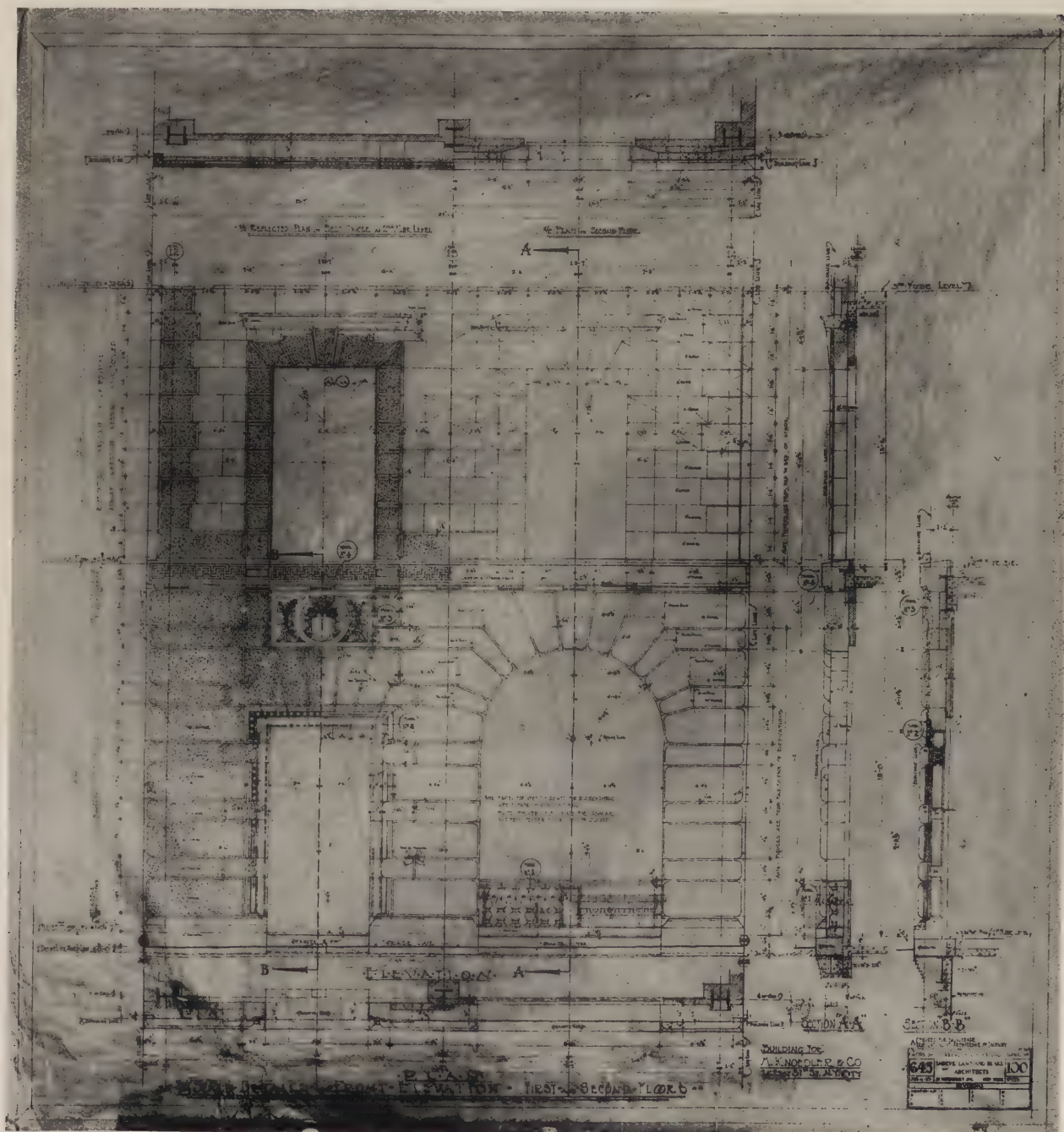


Figure 5. Working Drawing at Three-quarter Inch Scale, Developed from the Study Shown in Figure 4. Portion of Façade of Building for M. Knoedler & Co., New York City.
Carrère & Hastings, Shreve, Lamb & Blake, Architects.

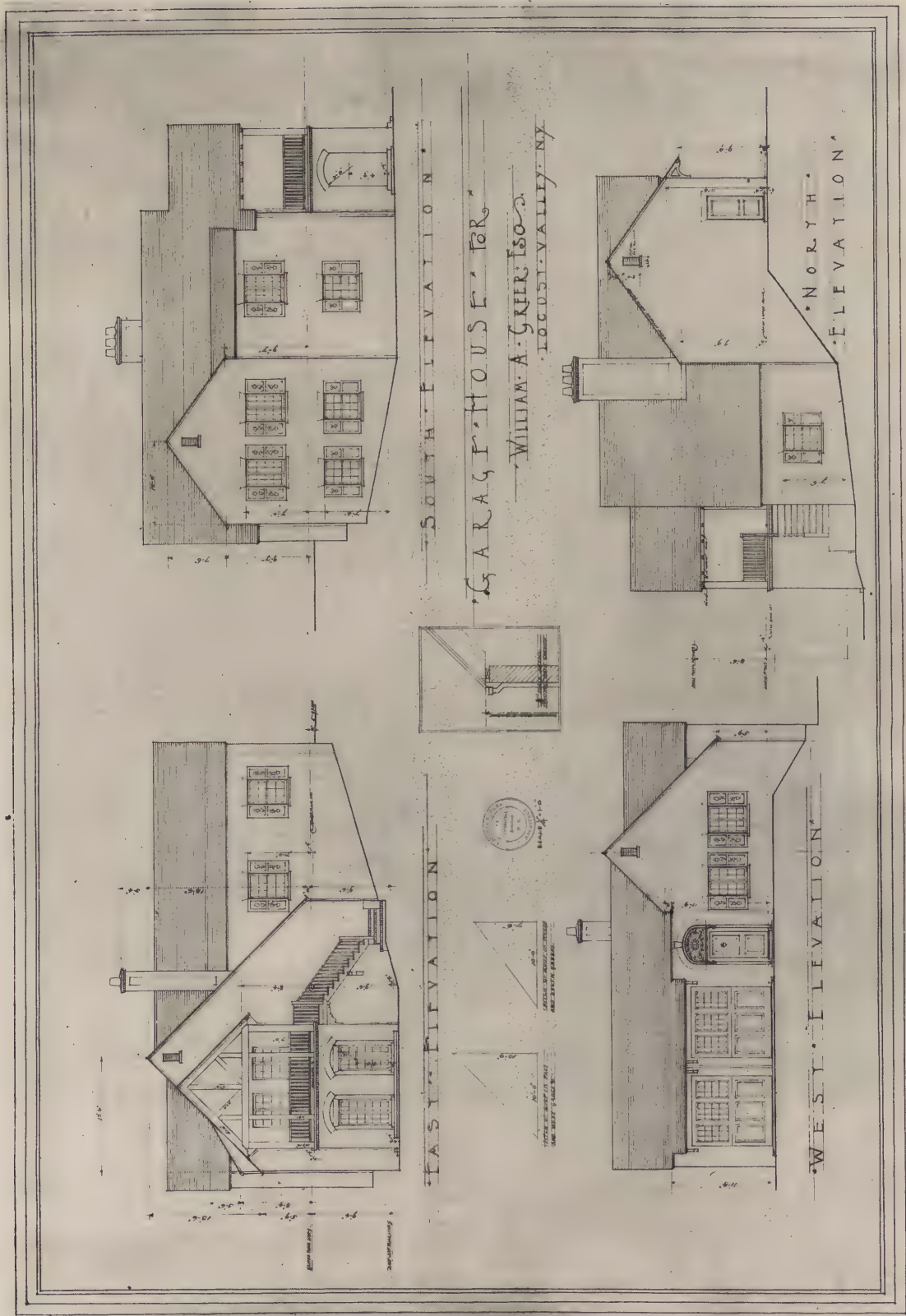


Figure 7. Working Drawings Developed from the Studies Shown in Figure 6. Garage-House for William A. Greer, Esq., Locust Valley, N. Y. Auguste L. Noel, Architect.

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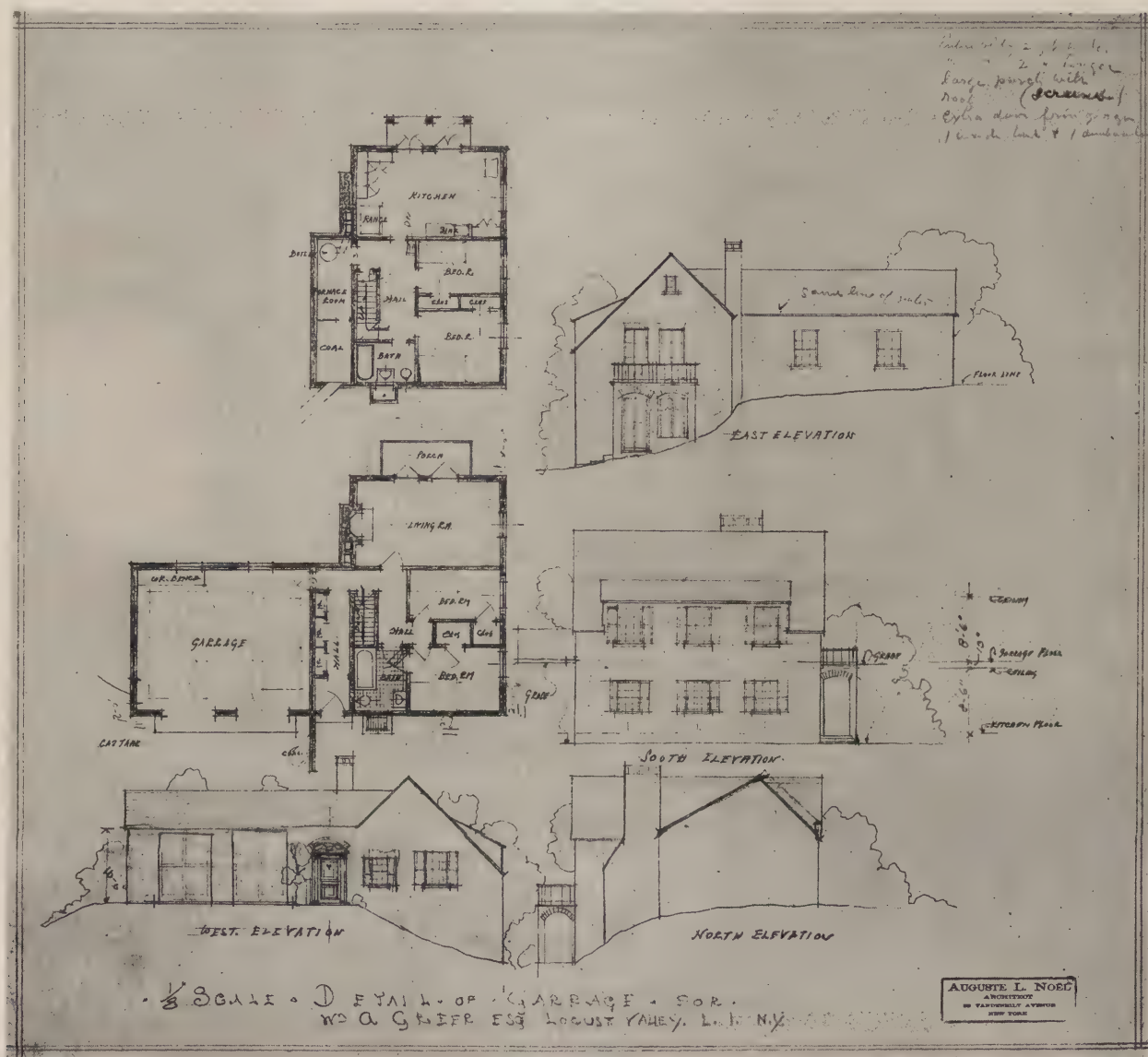


Figure 6. Sheet of Sketch Drawings Showing Plan and Elevation of Garage-House for William A. Greer, Esq., Locust Valley, N. Y. Auguste L. Noel, Architect.

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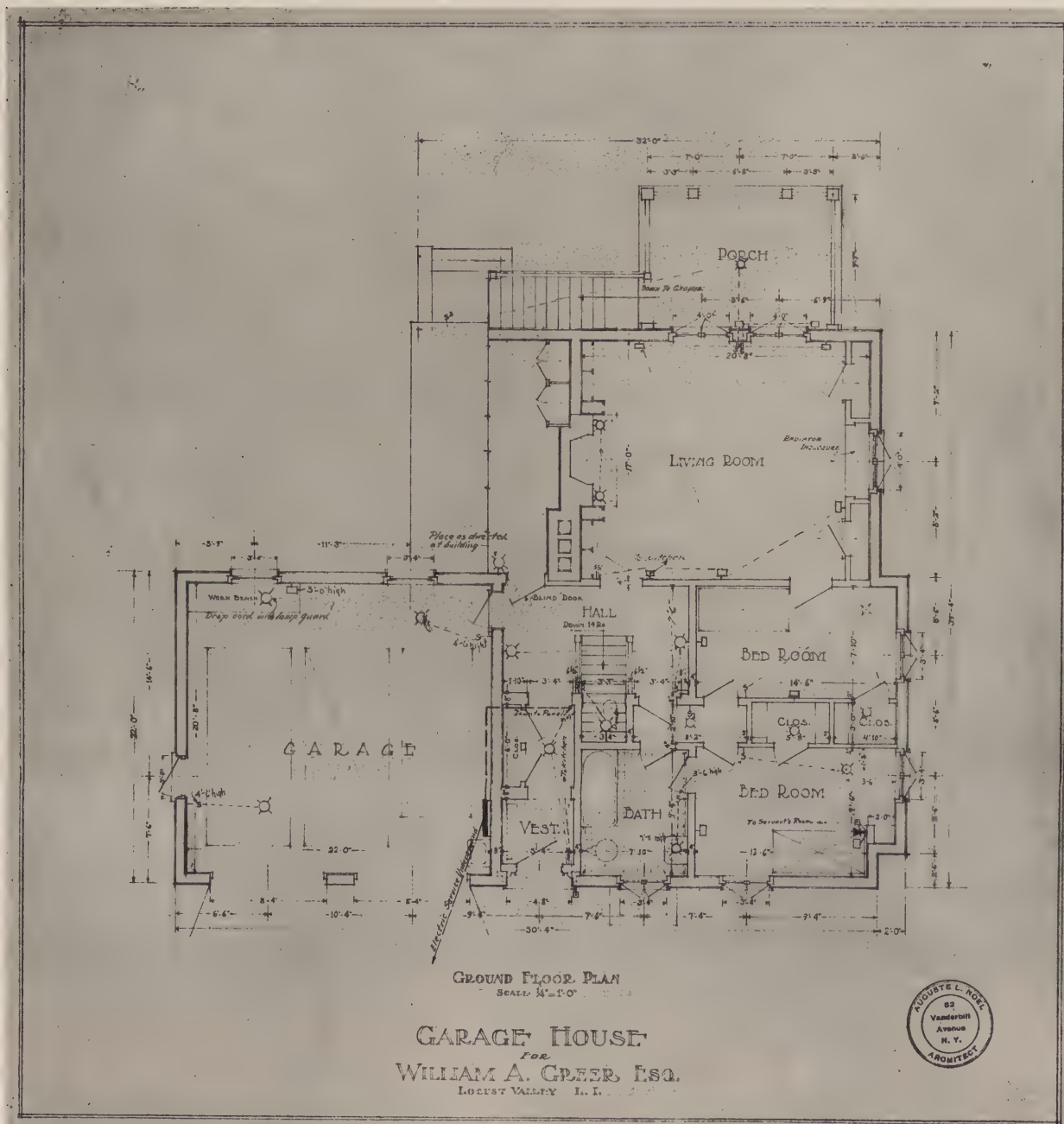


Figure 8. Working Drawing, Ground Floor Plan Developed from the Studies Shown in Figure 6.
Garage-House for William A. Greer, Esq., Locust Valley, N. Y.
Auguste L. Noel, Architect.

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overcoming the condition of the poor has always been a very serious problem in times past, and still is at this time. Is it not the duty of the various civic governments to work in accord with the architects and engineers to better such conditions, and thereby eliminate the unhealthy and unsightly districts in our otherwise more or less beautiful cities?

Good architecture can, and often does, meet the requirements of modernism and commercialism. As a rule owners make large demands in results for the money they desire to spend. Special study must be given to such demands. With the many types of construction and good materials to be had, usually the problems can be met. Simple lines, proper location of openings, texture of materials, etc., can be worked out into beautiful results. At times, the introduction of an elaborate and expensive feature will destroy the effect desired, when the design calls for simplicity. The best Colonial work executed in this country owes its beauty largely to simplicity itself.

In the foregoing remarks, regarding commercialism, modernism, unsightliness, etc., no criticism is intended, the intention is merely to call to mind the conditions to be met and remedied.

The serious practice of architecture is a comparatively young profession in this country, and we must take into consideration the struggles the nation has undergone, until it finally arose and became a power. Early migration of the poorer classes from foreign nations, and their struggle for existence here, has had its effect in retarding the beautifying of cities and communities. From the period when the Colonists and their immediate descendants erected buildings with the inspiration—and even importation of materials—from their mother country, comparatively few good buildings were erected, until the latter part of the past century, when a rebirth of good architecture came about. Architecture as a profession in the old world has, of course, been long established, and the wonderful buildings resulting have for ages made the old world a Mecca for students seeking that which is beautiful and good. Examples of good architecture in Europe have always been the traditional inspiration for good work. Many interruptions in the progress of architecture have occurred in the old world during periods of wars, unrest, etc. Remember, however, that perhaps one period of retardance in architecture in Europe, would equal the entire civilized period of the New World.

The history of architecture is most necessary to be considered by the architect, for it bears so much upon the work in which he is engaged.

The outline regarding the life of organized architectural practice in this country, and the comparison with architecture as an old-standing profession in the old world, was given above merely to show how this country has had to arrive at quick results due to the rapid growth of its population. Dwellings and buildings were necessarily erected without much thought to design, and commercialism resulted.

The thoughts of the true artist are not commer-

cial. He should, however, in return for his work, receive sufficient remuneration to enable him to develop and study his life work in all fairness to himself, and to those by whom he is engaged. A contented mind will always bring forth the best.

In the first paragraphs of this article, mention was made of four attributes of man, and may it be said here that the attribute of imagination, which perhaps may be regarded as the mainspring of design—too often crowds the other two attributes out of their due consideration, despite the fact that the functioning of the other gifts is necessary for complete co-ordination and realization of any work.

The work of the designer must always be carried on by the operation of the reasoning powers—with the thought of fairness—all under the dominance of will and in justice to all considerations.

This installment treats especially of the building up or development of working drawings from the designers' sketches. In the first paragraph of the first article on "The Making of Working Drawings," published in the May issue of PENCIL POINTS, the writer pointed out that working drawings are prepared or developed from the designers' sketches or presentation drawings. This installment treats of this period of development and shows what preliminary steps are necessary to the development of the design sketches, with the final working drawings in view. This involves analyzing the design and carrying forward the operation until the desired result is obtained in the form of working drawings.

Design sketches are usually prepared at a scale of from 1/32 in. to 1/8 in. to the foot. On drawings of this scale, it is impossible to indicate the sizes of stones, detail of ornament, etc. In fact, any detailed indication for practical use cannot be shown. The thickness of a pencil line on a small sketch would count as inches in execution.

Many draftsmen prefer to make development drawings, using light tinted color. This is very good to obtain color values, and if shadows are lightly cast, will also greatly help to determine the depth of window reveals, projection of cornices, etc. It is always best to study in a free way, using rather soft pencils, no hard-line drawing can be as effective. Studies made free-hand, without T-square or triangle also render the design in an imaginative way, and much inspiration and an opportunity to study sizes of stones, values of mouldings, etc., can thus be obtained.

Before any development drawings are made, it is most necessary to lay out, preferably in ink, building lines, floor levels and any exact information obtainable. Colored ink is generally used in this layout. Use this sheet, then, as a guide sheet, and trace sketches over this.

The drawings of two particular buildings have been selected to illustrate this article. Figure 1 shows the designer's study of a façade of an important city building. This drawing is a study in pencil of the general ensemble and the principal requirements of the façade were determined thereon. It will be seen that it would be absolutely impossible to indicate any precise detail upon it. While

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the drawing is made to accurate scale, the thickness of window sash, members of the cornice and other mouldings cannot be accurately shown for final execution.

Figure 2 shows a $\frac{1}{4}$ -in. scale developed study of the façade indicated by Figure 1. Before this drawing was developed, floor heights had been determined, the property lines known. This drawing was sketched over the layout drawing showing actual conditions available, and was studied in a free way, shadows were cast, etc. The exact sizes and spacing of windows were determined, the forming of the quoins established, and general depth of channels and reveals decided upon. An alternate treatment of the upper portion of the façade was restudied and this portion was simplified. This revised study of the façade was finally decided upon and was incorporated in the final working drawing, illustrated by Figure 3. This restudy of the upper portion was not for the sake of saving the expense of stone carving. It must be admitted that the design was improved by this restudy.

It will also be seen that the door treatment was restudied with better results. Compare drawing as indicated by Figure 2, with that as illustrated by Figure 1. It will be admitted that the developed drawing shows improved design. After such final results are obtained in design, a feeling of pleasure and satisfaction is recognized. The studies are now ready to be drawn in the form of working drawings.

Figure 3 shows the working drawing of elevation, illustrated by Figure 1 and Figure 2. This drawing is a typical working drawing developed from the design and development studies. Refinement has been introduced, figures indicated, and the finished floor above concrete slabs shown. This elevation with the plans and specifications will give all the necessary information from which estimates can be obtained and contracts signed. Care should be taken that, on all indications made on the working drawings, not any of the design is lost. In fact, more detailed indication of ornament, etc., can be shown. Sizes and scale of motifs must strictly be followed from the development sketches. This building was designed and the work is now under execution. It is not an expression of commercialism, although it is comparatively simplified in construction, economical materials are used.

The design as expressed by Figure 1, Figure 2 and Figure 3, calls for the need of larger scale drawings and the next step in development of the design is shown by Figure 4, being a $\frac{3}{4}$ -in. scale study drawing of the lower part of the same façade. This is rather a free study and allows play for the thoughts of the draftsman. The shadows are cast also to study reveals, etc. It will be noted on the reproduction that this drawing is really made up of parts of various studies pasted together.

A remark made in one of the former articles of this series stated, that, if necessary to restudy design, it would be better to step back to a smaller scale for ensemble effect. This is true, but the sketches illustrated herewith are not studies for redesign, but are examination drawings of detailed parts. Surfaces of walls, ornament, depth of

reveals, and members of cornices, etc., can best be brought out and shown in this manner. These examination drawings facilitate the making of the larger scale working drawings, and bring out in all their fullness the scale of balusters, archstones, and give a closer detail of ornament. A word of warning must be spoken, however, do not overdo or make development drawings too elaborate. Many designers and draftsmen like very much to study ornamental full-size details by shade and shadow indications. Unless this is very rapidly drawn or suggested, time is lost, for this is the work of the modeler.

Figure 5 shows the $\frac{3}{4}$ -in. scale working drawing developed from the study indicated by Figure 4. This is a true and valuable $\frac{3}{4}$ -in. scale working drawing of the lower portion of the main façade. All practical conditions have been incorporated. All stone work has been figured, finished floor above steel, stone work located in reference to steel, exact shapes and thickness of stones indicated, all of which makes a complete explanatory drawing.

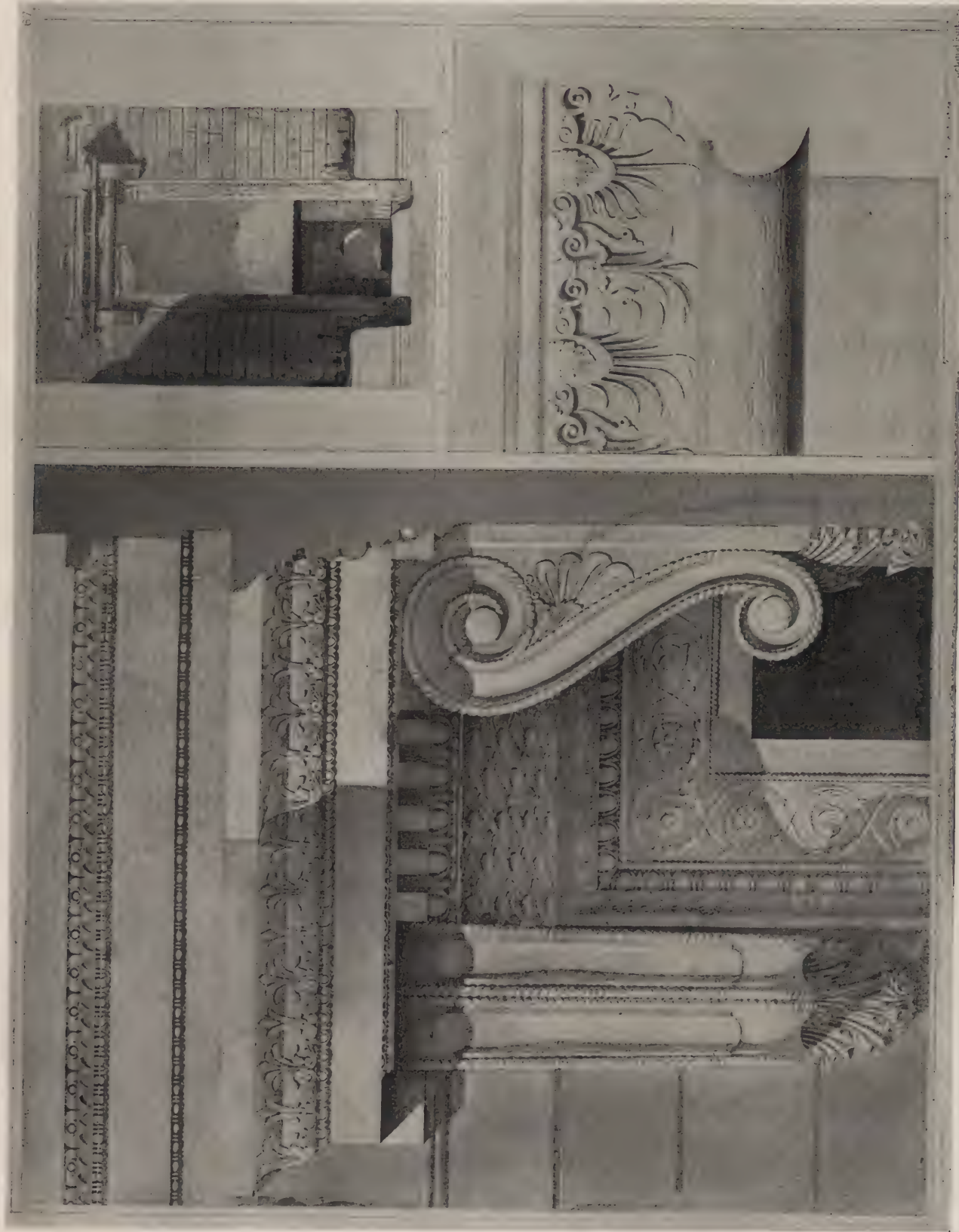
Figure 6 illustrates a sheet of sketch drawings, showing plans and elevations of a garage-house. This drawing was especially selected, first, to show how the entire problem was studied, grouping the plans and elevations on the same study sheet; secondly, how difficult problems can be worked out without much elaboration. Drawings or sketches of this kind can be worked out in a sketchy way with color and make very pleasing and readable presentation drawings to show to the client.

Note how the contours of the grade have been indicated around the building, and the various floor levels determined in accordance therewith. The plans are studied with careful thought. This drawing was not especially prepared as a show drawing. What little indication of grades, trees, etc., is shown, expresses, however, the architect's intent and the character of the conception very well. It may be remarked that the layman seems to admire "busy" looking sheets of drawings. It may also be said that any intelligent contractor can give a fairly accurate cost of erection, etc., from a sketch of this kind. This is also a great help in the preparation of the later working drawings.

Figure 7 illustrates the finally studied and finished elevation working drawing of the same garage-house. It can readily be noted how continued study has improved the general design. Oftentimes particular desires of the client will naturally affect the final design, and such changes suggested by the client must be taken into consideration by the architect. Observe how final grading has been determined. A charming outside stair has been added on the east elevation. The further study of window spacing has resulted in a great improvement.

Figure 8 illustrates the ground floor plan of the garage-house. This drawing is the final working drawing of the ground floor plan. It is the result of study from the sketch plan, indicated by Figure 6. The drawing retains the same general arrangement though more careful study and the definite

(Continued on page 55)



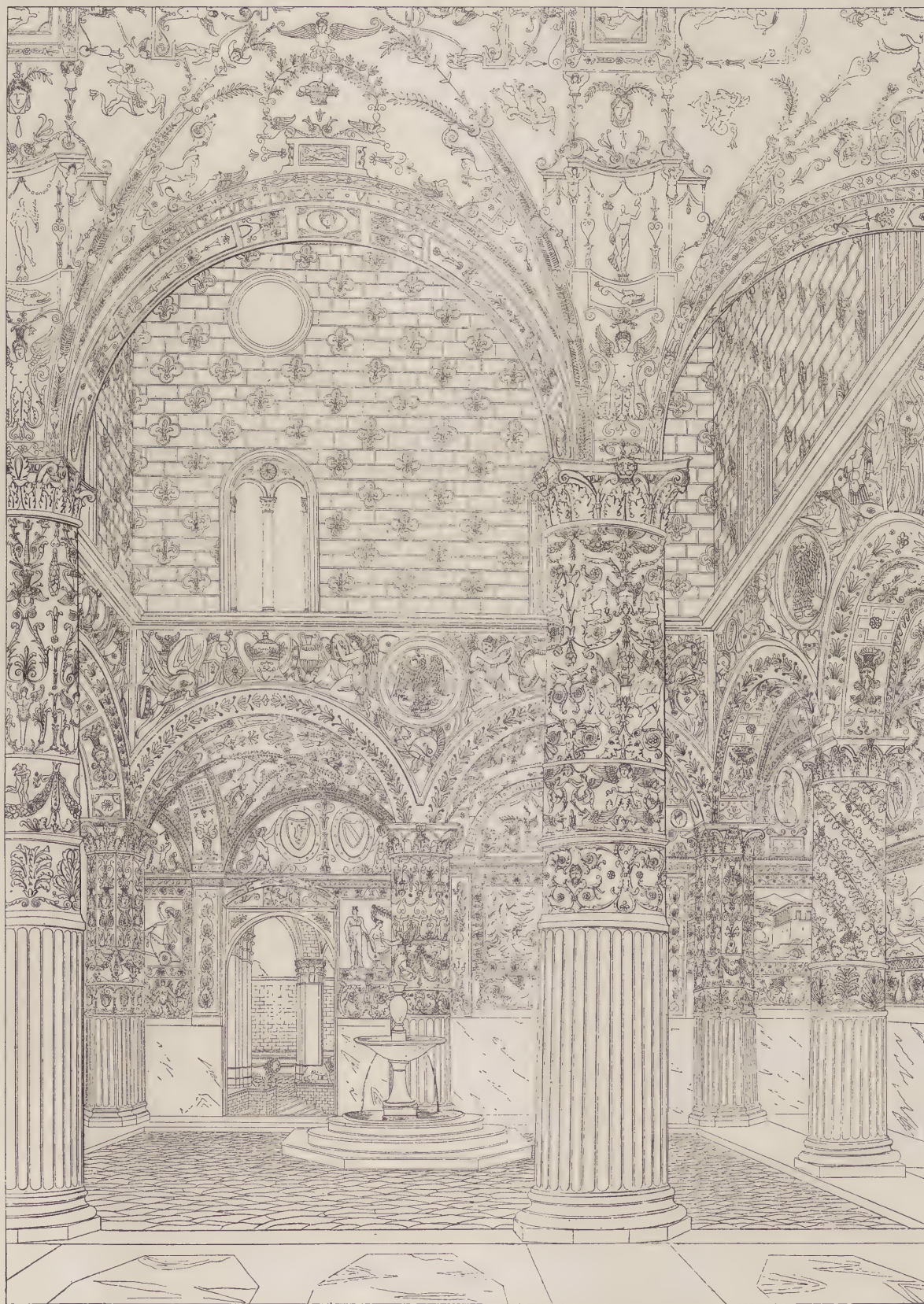
DETAIL OF THE TEMPLE OF AUGUSTUS AND ROME
FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

The Temple of Rome and Augustus, details of which are shown in the plate reproduced on the other side of this sheet, was erected as a tribute to Rome and to the Emperor Augustus in the year 763 of Rome or A. D. 9. This plate is one of the one hundred selected plates from D'Espouy's "Fragments D'Architecture Antique" which the publishers of PENCIL POINTS are reprinting in book form.



WATER-COLOR DRAWING BY WILSON EYRE

A very interesting and effective presentation study for a residence is shown on the other side of this sheet. This drawing by Wilson Eyre is notable for the freedom and mastery with which it is drawn with brush strokes in brown on a brownish paper of rough texture and colored with transparent water color and with gouache.



VUE INTERIEURE DE LA COUR DU VIEUX PALAIS, A FLORENCE.

COURT OF THE "OLD PALACE," FLORENCE, FROM "ARCHITECTURE TOSCANE"

The Palazzo Vecchio, or "Old Palace," the court of which is shown in the engraving on the other side of this sheet, was begun in 1298 by Arnolfo di Lapo. Michelozzo Michelozzi restored it in 1450, replacing the old brick columns of the court with stone. These columns were richly decorated with ornament in white stucco on a gold background and the porticos were ornamented with colored arabesques by Marco Marchetti or Marco Marcucci de Faenza in 1565. This engraving is from the reprint of "Architecture Toscane," just published by the publishers of PENCIL POINTS.



MURAL PAINTING BY ARTHUR CRISP. "THE PERSIAN LOVE BOAT."
CLOVER GARDENS, NEW YORK CITY

The mural painting by Arthur Crisp which is reproduced on the opposite side of this sheet is one of the features of the beautiful scheme of decoration Mr. Crisp conceived and carried out at Clover Gardens, New York City. This is one of three large mural panels, which are painted after the usual manner of mural paintings, while the other wall surfaces are effectively decorated with somewhat conventionalized designs executed with the aid of key stencils, as described in the article beginning on page 41.

THE USE OF KEY STENCILS IN MURAL DECORATION

BY ARTHUR CRISP

STENCILS of the usual type are unsatisfactory because of the difficulty in securing sufficiently accurate register where more than one stencil plate is used, for instance, where a design is to be stencilled in two or more colors and the stencil plate for each color must register or match the others or the colors will overlap in some places and fail to cover in others. This difficulty increases with the size of the stencil and for a decoration eight feet by ten feet it is serious. The use of key stencils obviates this difficulty and gives much of the free-hand character to the result.

By a key stencil I mean a stencil that puts in the outline only, with perhaps a bit of shading here and there, the various colors of the design being painted in free-hand within the areas bounded by the stencilled lines. By making the stencils in the way I shall describe presently there are no "ties" and the stencilled outline looks very much as though drawn with a brush, as a matter of fact it is drawn with a brush in making the stencil.

Perhaps the best way to describe this method is to tell exactly how I used it in the decoration of Clover Gardens. The problem was to transform an entire floor of the Grand Central Palace into a place in which people of the best class would want to spend the evening in dancing. There was an acre of floor and a ceiling thirteen feet high, and the place had to be made attractive, given an atmosphere. One of the means adopted for doing this consisted in enriching the greater part of the wall surface with decorations painted with the aid of key stencils.

The chief wall decorations consist of three large mural paintings which form the centres of interest. These were painted in the usual way, without stencils. One of these murals "The Persian Love Boat" is shown as a plate page in this number. The other murals are "The Abduction of Columbine" and "The Return of Columbine."

In passing it may be said that since any decoration on the ceiling would have made it look even lower than it was, only the simplest ceiling treatment was used. The entire ceiling was first silvered with aluminum powder. It was then stippled in orange. The orange stippling gave the exposed silver a bluish appearance and the play of colors is effective. The stippling was done with window washing brushes from which the handles had been sawn off. The immediate result was that the ceiling seemed about two feet higher.

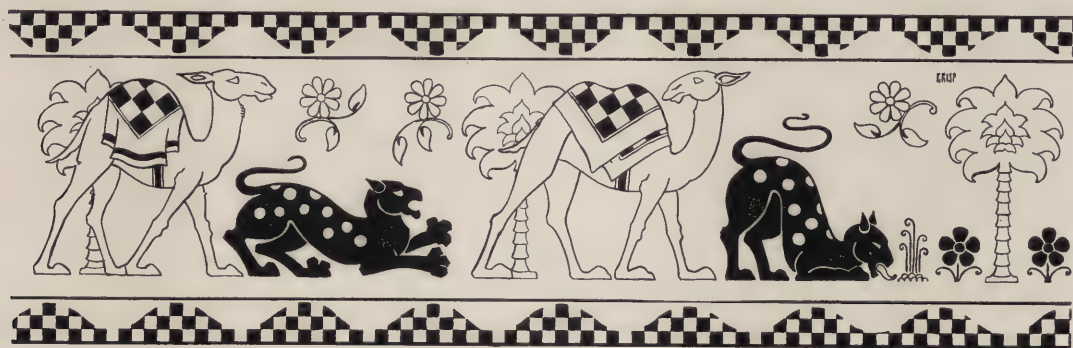
On the broad expanse of floor are many square piers that are part of the structure. Their appearance of clumsiness was relieved by treating them with mirrors. To break up the stiffness of this arrangement and to remove the last suggestion of a big bare room with a low ceiling, twisted columns in antique gilt were set on the floor in the form of a large quatrefoil.

Now, to get back to the matter of the key stencils. The first step was the making of the designs, carrying an outline around all parts. Four of the panel designs for key stencils are shown on page 42. Next, lantern slides were made of these designs and they were projected and drawn upon the cloth of which the stencils were to be made.

This cloth, a "cotton voile" (cheesecloth will do) is stretched on a frame and filled with a coat of pipe clay. The excess must be scraped off. The cloth should not be pulled in putting it on the stretcher, the shrinkage will make it tight when the coat of pipe clay is applied. When the pipe clay filler is dry the outlines are painted in with glue, containing a little glycerine and some coloring matter, in this case I used a dull red.

When the glue is dry a coat of spar varnish is applied to the side of the cloth the glue is on. The varnish penetrates the pipe clay and binds it, ex-

(Continued on page 53)



Decorative Band by Arthur Crisp, for Clover Gardens, New York City.

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Persian Group



Russian Group



Spanish Group



Bulgarian Group

Designs for Panel Decorations by Arthur Crisp for Clover Gardens, New York City

See Text on Page 41

THE TECHNIQUE OF RENDERING, PART II.

BY FRANCIS S. SWALES

In the serial article of which this is the second installment Mr. Swales explains practical methods of rendering. These methods, though based on what may be regarded as standard practice include variants that have been found effective in actual work. In preparing this article Mr. Swales has drawn freely upon the fund of experience he has gained in his architectural work.—Ed.

IT MAY be well to say at this point that all pencils, inks, instruments and paper are not the same. There is a great difference between the various makes as all draftsmen soon become aware. Several well-advertised drawing pencils vary so much in hardness, or "grading," in the same pencil that to describe them by the letters representing grading means nothing. At one moment too much graphite strokes a soft crumbly line; at the next, a particle of hard clay scratches the surface of the paper. A good rendering implies a good line drawing and to be certain that the pencil will neither "grease" nor scratch the paper, knowledge of the standard of the grading of the pencil, and of how far different gradings may be depended upon is necessary. Taking the HB as the standard "medium" pencil and comparing several different makes, it will be found that the quality of line produced varies with each manufacturer; and in many makes the grading seems to have no standard. But good pencils differently graded are now produced by at least one or two American manufacturers, and it helps in making effective drawings to observe the kind of line which different gradings of the same make of pencil will produce under the touch of the individual draftsman. Prepared India ink varies in thickness and in the ease with which it will flow from the pen and in the qualities which give a soft, "velvety" line or one that shines like patent leather. Some can be diluted with water and a few drops of ammonia to give a line almost exactly like a good firm pencil line.

Generally, lines in the foreground of an elevation require to be heavier or darker than those in the plane of the building, while in the background they should be lighter. The effect can be obtained by the use of a harder grade of pencil in drawing the background than for the building, and a softer grade for the foreground. Many draftsmen work naturally with an almost constant pressure, varying it only with a great deal of effort. To them the use of three grades of pencils serves as a substitute for a natural inclination on the part of others to use but one grade, and to vary the effect of line by a difference of pressure on the pencil point. The most effective line drawings made preparatory to graded wash drawings are those in which the line itself is graded from dark at one end to light at the other. This trick is performed with the ruling pen by turning the screw regulating the width of line while the line is being drawn. The pen must have a point or edge that is sympathetic to personal touch—the line must be felt by the guiding finger. Study the outline of the building and of the pedestals and statues and the right side of columns in the drawing by Mr. Albert Ross, Figure 10, which is produced by varying the pressure in a rapid stroke of the pencil or pen. I have seen drawings by Mr. Ross which appeared to be made with a 3B or 4B pencil on cold-pressed paper which were marvels of crisp, clean draftsmanship with the line work beautifully graded, creating an impression of bright sunlight striking the building and of great spontaneity of indication in the drawing. In



Figure 14. Design for a Lakeside Pavilion. Georges Lefort, Architect.

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Figure 10. Competition Design for Library. Ackerman & Ross, Architects.



Figure 11. Measured Drawing of the Loggia dei Lanzi, Florence, by H. L. Duhring.

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Figure 12. Doorway. Babb, Cook & Willard, Architects. Drawn by Paul Gmelin.

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studying this drawing by Mr. Ross note the white lines between the shadows cast upon the glass by the reveals of the arches and the window frames and along the right hand side of the parts of the sash bars which are within these shadows, also along the under side of the mouldings of the arches which are within the shadows cast by the lower edge of the entablature and by the surfaces of the columns. These lines are "reflected lights." In the first case—the line between the shadow and the window frame—it is a "trick," or convention, to preserve the true effect of the connection of frame and sash bars as they would appear in viewing the building. In the case of the sash bars and the mouldings the reflected lights would be actualities, since the light reflected by the ground would be again reflected back upon the bevelled or moulded surfaces which are turned towards the ground. The direct conventional lighting is supposed to follow the angle of the diagonal of a cube. The base of the cube is assumed to be the ground line and one face to be parallel to the face of the building represented. The rays of light striking the ground are reflected; that is, they travel on, making the same angle with reference to the ground and face of cube or building, but striking in an upward sense, from the lower, near, right hand corner of the cube to the far left hand corner. The rays travelling on thus, cause reflected lights within the shadows and reflected shadows also within the shadows, but in the sense of the opposite diagonal of the cube. See Figure 11. Note that the rays of direct and reflected lights are in the same plane as regards the elevation (determined by a line of 45 degrees downward from left to right, and reflected along the same line, upward from right to left) while they are at right angles to each other with reference to the

"plan." In descriptive geometry the "elevation" is called a "vertical plane" and the "plan" is called a horizontal plane.

Study of the subject of shades and shadows is essential to conventional rendering and useful in making free renderings and sketches. This subject is simply and fully covered in Henry McGoodwin's book, "Architectural Shades and Shadows," which, until it is thoroughly mastered, should be a part of every good draftsman's equipment, like his T-square and ruling pen.

Of the paper generally used in making renderings there are different weights, varying with the size of sheet, and three different surfaces. The surfaces are known as "cold pressed," which is best for wash drawings; "hot pressed" suitable particularly for fine pencil, or ink, line drawings; and "rough" or "water-color" which is best for sketches in color. Colors which settle unevenly or in "speckles" or "pebbles," such as French and Cerulean blues, vermilion and burnt sienna, smalt, etc., flow best on the rough surfaces, while those which settle evenly such as Payne's gray, indigo, aureolin yellow and carmine, especially as simple tints, show to advantage on the smooth surface of the hot pressed papers. Surface is mainly, therefore, a matter of personal choice of effect desired in the drawing. Weight is a matter of more importance. For nearly all kinds of rendering but particularly for wash-drawings only the heaviest weight should be used. It is obtainable, as a rule, only in the largest size of sheets, "Antiquarian" which can be cut to smaller sizes. The heavy quality may be stretched on a drawing board or mounted on pulpboard or other lightweight mounting board or on a well made stretcher. Most architects have the habit of stretching the paper on



Figure 13. Competition Design for a Library, Francis S. Swales.

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the drawing board by wetting the paper and pulling and pasting down the edges; but the writer has found the card or stretcher with the drawing paper "floated on"—that is, pasted down all over the sheet—much more convenient, especially for large wash drawings. Small sheets cut from the heavy paper may be made into blocks and will withstand many washes carrying a great deal of water without buckling. The greatest advantage of the heavy quality is that the body gives firmness to the texture of the surface. With the lighter weights the texture is partly lost by stretching, the surface is also more subject to small defects of manufacture which may be a serious damage to a fine drawing.

If the paper is mounted on a well made stretcher the usual difficulties with drawing boards are avoided. The stretcher frame should be especially made with braced and squared corners and good, straight edges, covered with properly stretched muslin tacked every two or three inches to the frame, then with a strong smooth surfaced heavy detail paper floated onto the muslin. The drawing paper is floated upon the detail paper, with thinned out drawing board paste after the latter has dried. This kind of mounting solves many minor troubles in the making of very large drawings, especially those which exceed the "antiquarian" size and require the splicing of sheets. The deckle-edge of the paper must be cut off to true edges and "square" corners and mounted with the edges parallel to those of the stretcher frame.

The advantages of the card or stretcher mounting are that the lightness of the mount permits the sheet to be tipped in any direction with the left hand, while the right is manipulating a large wash; the drawing does not have to be taken up, which involves the danger of splitting off corners, or occasionally the whole width of the sheet in cases of tightly stretched paper stuck along the edges to the drawing board; and it does not have to be remounted with the attendant risks of damage by tearing, splitting a splice, or by drops of water or daubs of paste. Good right-line work requires the use of a T-square an inch or so shorter than the length of the drawing board or strainer with a perfectly straight, true edge, for the horizontal lines; and triangles with a perfect 90 degree angle and with the vertical edge a little longer than the longest vertical line in the drawing. The best material for both is mahogany with edges of ebony which does not warp, shrink or swell, and holds tenaciously to the small screws with which the head of the T-square is fastened to the blade. The upper edge of the blade of the T-square should be at the middle of the length of the head (which is necessary for use in making perspectives). The blade of a square, thirty-six inches or more in length, should be beveled as regards its width on its lower side, varying from four or five inches at the head to only two or three inches at its outer, or right hand, end; and beveled as regards thickness at its upper, or working edge, from about $\frac{3}{16}$ inch thickness of blade to $\frac{3}{32}$ inch thickness of working edge. The head of the T-square should be about $\frac{3}{8}$ inch thick. At least five good brass screws,

with wide heads and sharp threads, placed well apart, are necessary to secure firm junction between head and plate to prevent any tendency to rotation between the two.

The beautiful, purely architectural drawing by Mr. Gemelin (Figure 12) illustrates the use of "shade lines"—lines defining edges casting shadows, and lines of "high light"—which receive the light upon their arrises, and simple treatment of graded washes to make clear the general modelling of a simple subject. The study and copying of a drawing such as this is good practice for the beginner.

The use of the "white" line—or high light—which should be left untouched by the wash in making a good finished drawing—is illustrated in Figure 13. (The original old drawing from which this figure is made, was touched up with Chinese white to draw attention to the points at which high lights were left, and the shade lines were strengthened to show in the small reproduction. This drawing, and also Figure 14, are of a kind generally used in competition designing and are of a class which is neither purely academic nor can be considered as free rendering. Conventional drawing of the architectural work is combined with more or less "conventionally-free" treatment of naturalistic surroundings.

(To Be Continued.)

THE COPPER DRAGON OF THE CHURCH OF ST. MARY-LE-BOW

THE copper dragon of the Church of St. Mary-le-Bow is now three hundred fifty years old. It was set up in 1573, during the reign of "Good Queen Bess," and from its lofty perch, 221 feet above the sidewalk, has looked down upon many historic events. Aside from its age and the historic interest that attaches to this old copper dragon there is an even stronger interest due to the present revival of the use of the weathercock on our larger buildings. The Cross of St. George is emblazoned upon the wing of the dragon. The dragon is made of sheet copper and is eight feet six inches long.



PENCIL POINTS



Pencil Rendering by H. B. Cody. Residence for Mr. Ben. R. Meyer, Beverly Hills, Cal.
Johnson, Kaufman & Coate, Architects.

PENCIL POINTS



Pencil Sketch by C. H. Walcott, Chicago, Ill.



Pencil Sketch by I. Howland Jones, Boston, Mass.

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ARCHITECTURAL DEVELOPMENT IN ROGERS. BY WILLIAM EMERSON.

Reprinted from "The Tech."

THE real problem before the Department of Architecture is how to equip its students so that they may ultimately meet the constantly broadening demands upon architects and engineers.

It is much easier to state this problem than to solve it. Even assuming that the Department knew exactly what steps to take to accomplish such an end, many physical difficulties at once present themselves. Perhaps the first and greatest of these is the question of time.

We are under the necessity of condensing our teaching effort to a period of four years—a sufficient period for such students as come to us with a college education, but a dangerously inadequate period within which to give a student coming directly from high school both a general and a professional education.

Demands of Architects' Offices.

The need to use the years at our disposal upon the essentials is thus obvious, and the successive changes that have been made in the curriculum during the last three years have all been directed towards this end. Taking up these changes seriatim, the first was an attempt to better qualify our students to meet reasonable demands from architects' offices immediately upon graduation. The practising architect naturally wants competent draftsmen in his office, but is prone to forget that such a product is the result of years of training—training to which the years at school can be applied only in part, as their purpose is to equip a man destined to be an architect and only incidentally a draftsman. In consequence, the school graduate lacks the knowledge of office procedure, of technical details, etc., that the man brought up in an office readily acquires.

In order that our students, therefore, might be of practically immediate use in an office on graduation, we have supplemented our winter course in Office Practice by a required summer course in this same subject. The time is handled and the work distributed as in an office—jobs in actual process of execution in or near Boston being followed step by step through the early stage of preliminary sketches, working drawings, details, specifications and contracts to the construction work—time sheets and responsibilities of clerk of the works or superintendent.

More Hours for Architecture.

Following the same direction and acutely conscious of the value of our fleeting minutes, we have so revised our course schedule that the prospective architect may begin his professional subjects in his freshman year—thus utilizing the full four years on Design and Drawing, and not crowding such vital subjects into the last three years. To procure time for these new freshman courses a careful elimination of all subjects not essential to the modern architect's needs was imperative. Freshman Physics and Sophomore Mathematics admittedly gave the Option I student preparation for which there was no practical application later in his professional work. These subjects have, therefore, been entirely omitted, and a consequent revision of Applied Mechanics results in the completion of Constructive Design by the end of the Junior year, leaving the Senior year free for new courses in Landscape Design, Town Planning, Architectural Humanities, and the Theory of Architecture, which, together with Modelling, fill the available hours.

This thorough overhauling of the schedule was accomplished in consultation with Professors W. H. Lawrence, E. B. Wilson, H. W. Tyler, and C. F. Fuller, after a unanimous expression of approval from twenty of the most prominent alumni.

The changes above alluded to have applied directly to the Option I students but the process of revision resulted in a clarification and differentiation of the aims of the two Options to the end that the schedule of each is more effectively designed to meet its purpose, and to place more clearly before the public the qualifications of the students who win our degree.

Rogers' Student Movement.

Other steps that the department believes have greatly helped towards the development of our students on lines that will prove useful in their later years even if not quite so directly as those referred to above, are, primarily, the creation of a vigorous department spirit. This spirit tends to cultivate self-reliance, readiness to assume responsibility, and an eagerness to co-operate with the teachers. It has found expression in the formation of a student council, the creation of the honor system, and has won recognition from the alumni in the activities of an Advisory Council, deeply interested in and keenly alive to Department needs. These needs, together with all Department activities, are now made known to graduates through a Bulletin, of which one copy is published each term; a thoroughly useful element in preparing a welcome for our yearly graduates among those who have already received positions of prominence.

In order to give our students the fullest possible benefit of their location in such a centre as Boston we have arranged active co-operation with the Harvard School of Architecture and the Boston Architectural Club whereby the work in Design of all three institutions is compared in conjunctive judgments throughout the year. Our design work is further sent to New York for judgment alongside that of all the schools of the country under the auspices of the Beaux-Arts Institute of Design.

Men Sent to New York.

One other step to familiarize the student with the more complex problems that he may meet in the future has been taken in sending those with the best records in the Senior Class of both Options to New York City for a chance to study the great building operations under construction there.

A recent movement of far reaching significance was first undertaken this year in co-operation with the Boston Society of Architects in offering cash prizes, open to undergraduates and former students of the past five years at Harvard, Technology, and the Club so as to encourage recent students to continue their study at the Schools and so that the undergraduates may benefit from contact with older and more experienced men.

In these many ways the work initiated by Professor William R. Ware, fostered by Professors Letang, Despradelle and Chandler, supported during the lean years of the war by the devotion of Professors Gardner and Lawrence, is being continued.

PENCIL POINTS



LEE ROMBOTIS

LEE ROMBOTIS, who has just won the Paris Prize of the Society of Beaux-Arts Architects, was born in St. Louis in 1899. After graduation from High School in Los Angeles he worked four years in the offices of Pierpont and Walter Davis, and of Meyer & Holler. Mr. Rombotis did problems of the Beaux-Arts Institute of Design in the atelier of the Los Angeles Architectural Club under the supervision of the patron, Fitch Haskell.

Last year Mr. Rombotis took a special course at the University of Pennsylvania. Mr. Rombotis feels that the instruction and guidance he received from Paul Cret has been of special value to him. He will leave for Paris the latter part of September.

PRELIMINARY EDUCATION

BELOW we print an excellent letter which is being sent out by Carl F. Gould of Bebb & Gould, architects, and Professor in Charge of the Department of Architecture of the University of Washington, Seattle; in response to the many requests he has received for advice as to the essentials of an education for boys in grade and high schools who expect later to take up the study of architecture:

"Your letter of March 12th received, asking me what I think is the best definite plan to follow for the study of architecture. There are two fundamental traits requisite for a man who hopes to be successful in the field of architecture. He must, primarily, have an artistic angle toward life; and, secondly, he must have a good keen mind and be a thinker relating to matters concerning construction.

"In the first case, you should take every opportunity to draw. There are three general ways for drawing which will be of advantage to you. First, freehand drawing, in which you should acquire skill in being able to represent a physical fact set before you with accuracy and precision as to its mass, its outline, its shades and shadows. In this work, usually, a symmetrical object is advisable—a telephone, a vase, geometrical forms such as pyramids, cylinders, cubes, etc. I would advise carrying

in your pocket a sketch book and at every opportunity make sketches of doorways, windows, gables, cornices, modillions, etc.

"Secondly, to make imaginative drawings is important. Think upon what should be an ideal bedroom plan, an ideal bathroom, an ideal dog kennel, chicken coop, boat house, etc., and make sketches in your sketch book representing varieties in plan as well as in perspective elevation of the ideas that come to you. In this process do a lot of thinking and not as much drawing, and use your drawing as a basis for developing your further thinking.

"The third method for drawing is to look at something—the outline of a building, a boat, a cornice detail—and without looking at it again remember what you have seen and see how accurately you can reproduce it from memory. This exercise is very important and a good test of your capacity for eventually becoming an architect.

"I would advise you to subscribe to PENCIL POINTS, and read every article. I would advise that you visit the art department of the Seattle public library, look over the current art and architectural magazines; visit buildings in process of construction, obtain a copy of the plans for such buildings and study same.

"Now as to the work you would take in school, I would say that a general education would be necessary, the more of it the better, but in particular take courses in history, know something about your classics; you should be able to read Latin or Greek, particularly Virgil; some of the modern languages, particularly French, and learn to speak it. You should take courses given in drawing, especially those that take up freehand and color work, and decorative composition. From the point of view of construction—geometry, plane and solid, is very necessary. Of course, arithmetic and algebra are fundamental, and a short course in physics and chemistry is very desirable.

"I would advise getting acquainted with an architect or a draftsman in an architect's office, especially those architects who are members of the American Institute of Architects. Every city has its local Chapter. Unless you aim high in undertaking the profession, there are too many in it and you had better become a carpenter or a stone mason. In your summer vacations, it would be a good idea to work on buildings in course of construction, and in any capacity, taking every opportunity to familiarize yourself with the plans of the building on which you are working. In this way you may find yourself very useful to the contractor and helpful after a summer's experience in laying out work. If there are surveyors on the job, obtain a little experience in running a surveyor's instrument.

"When the proper time comes a certain amount of knowledge of office management is necessary, the filing of plans, tracing full-size details, and bookkeeping might be of use in helping you to obtain your first job in an architect's office.

"All of those phases requisite to become an architect who can properly serve his community may seem at first reading beyond the capacity of an individual. However, if one works slowly and persistently toward such an ideal, there is no doubt but he may obtain success. It is not beyond the capacity of a man who cherishes a sincere desire to make the structures in his community not only of more sound construction but more beautiful in aspect.

"After leaving your elementary instruction there are several schools of architecture in this country such as the University of Washington's Department of Architecture. Both Boston Tech and the University of Pennsylvania are schools which we most highly recommend; and there is now a summer school in Fontainebleau, France, for American Architect Students, for which I am now endeavoring to obtain a scholarship for some senior student at the University of Washington.

"I wish you all success.

Very truly yours

CARL F. GOULD,

Firm of Bebb & Gould.

Professor in Charge of Dept. of Architecture, University of Seattle, Washington.

"P. S.—I neglected to mention the importance of modeling and descriptive geometry."

PENCIL POINTS

AMERICAN ACADEMY IN ROME

FROM a letter received by Grant C. La Farge, Secretary of the American Academy in Rome from Frank P. Fairbanks, Acting Director, we quote the following items of news:

This is the month when the exodus for travel begins at the Academy and the time when the contemporary National Academies in Rome hold their annual exhibitions. The Italian government held recently an exhibition of its prize men's work in the Campidoglio. Both the French Academy and the British School were strong in draftsmanship, especially the latter where an evident influence of Augustus John seemed to prevail. The French Academy showed painting and sculpture mostly. Only two architectural drawings were hung. The French never seem to send any technical fumblerers to Rome. They apparently prefer men with a good solid groundwork of ability to handle the tools of their craft rather than to place their confidence in painters of promise or taste, unfortified with the grammar of their trade. The British students are in several cases very remarkable in their figure indications, especially their first year probationer. They have a system that might be adopted to advantage by the American Academy of sending a man out to Rome for a year and awarding him two additional years if he proves by his accomplishments worthy of the honor.

On the 3rd of June Mr. Edwin H. Blashfield arrived in Rome for a more leisurely visit than heretofore. He has seen the work of most of the men and given very generously of his encouragement and counsel. The Fellows gave a dinner in his honor on the 18th just before he left for a trip to a number of hill towns that were new to him.

The Academy made its annual visit to the Villa Albani at the beginning of the month, when Prof. Amelung talked on the sculpture collection at some length. Week-end excursions to the Villa Catena, Nemi, Albani, Tivoli and other interesting sites have become a habit with some of the men. Prof. Faulkner, Prof. Curtis, and Lascari participating quite regularly.

Prof. Showerman, Prof. Van Buren and Prof. Curtis are travelling, the former in Dalmatia, the latter two are away for the rest of the Summer. Prof. Van Buren is in England and Prof. Curtis touring Switzerland, Germany, Belgium and France.

Prof. Faulkner is well advanced with his part of the Memorial for Thrasher and Ward, having almost completed the fresco in the west aisle of the cortile. He starts at sunrise and stays with his work through most of the day in order to take advantage of the wet plaster.

Mr. Walter Damrosch has been in Rome for a week or more and has quite thoroughly gone over, with Professor Lamond, the work of the Music Department. He is to produce Hanson's Symphonic poem, "North and West," in New York next season.

J. K. Smith, our senior architect, is taking a few days to visit some hill towns. He has been keeping a group of drawings going on the Villa Catena, some full size details of notes made during his travels, besides color studies and renderings of other subjects. He has found it necessary to have one or more assistants in his duties all the time.

Hafner, second year architect, has concluded his article on the restoration of the Basilica of Constantine, which he has worked on in cooperation with Miss Franklin, Classical Fellow, and it is now ready for the press.

Henri Marceau, first year architect, has at last "sold" his ideas on the restoration of the Temple of Concord to his collaborating archaeologists, Prof. Frank, and Dr. Robert, Visiting Classical Student, so that he has been able to carry forward his drawings considerably. He is to travel for two months and then render his drawings in September, when he returns.

Cecere, third year sculptor, has finished all of his required work and is now developing a low relief in marble.

Amateis, second year sculptor, has nearly finished his Renaissance Madonna and Child in its architectural setting, and is carrying on a single figure in the round, to

replace his figure of last year, which is unsatisfactory to him.

Stevens, first year sculptor, is developing his required figure—a standing symbolical figure of youth and energy.

Ciampaglia, third year painter, has his required work well in hand and is working on a new composition of a decorative group of three figures.

Schwarz, second year painter, in much better health than for some time, has just returned from a few weeks of travel in the north of Italy.

Floegel, first year painter, has his first year composition ready for his canvas and has been copying two of the Muses by Spagno in the Museum of the Conservatore on the Capitoline.

Leo Sowerby and Randall Thompson, composers, have both left Rome for the Summer, each to travel for six months.

ARTHUR F. DEAM

ARTHUR F. DEAM who has been awarded the Rome Prize in architecture was born in Springfield, Ohio, in 1895. He attended Wittenberg College one year (1912-13), entered Ohio State University in 1914 as an Architectural Engineering student, and later transferred to the architectural course.

Mr. Deam enlisted in the Navy in 1917, was in the service seventeen months and was discharged with deck officer's rank, ensign. He worked in New York City, 1919 and 1920, designing suburban houses and selling Westchester and Long Island real estate. He returned to Columbus, Ohio, in January, 1921, and graduated in June, 1921, as Bachelor of Architecture. Mr. Deam was employed for a year and a half by Howard Dwight Smith in a general architectural practice, including plans for Ohio Stadium and Columbus School's.

Mr. Deam entered Columbia University in September, 1922, and graduated this year with the degree of Bachelor of Architecture. During the school year he was employed in the offices of Helmle & Corbett.



A. F. Deam

PENCIL POINTS

THE USE OF KEY STENCILS IN MURAL DECORATION

(Continued from page 41)

cepting where the glue is. The varnish is allowed to stand a few minutes then the surface is well wiped with a cloth. The varnish sinks into the pipe clay but wipes off clean from the outlines in glue. Cheesecloth is good to use in wiping the varnish.

When the varnish has dried until it is solid, the glue is washed out with hot water and a cloth, from both sides. All of the pipe clay must be washed out of the mesh of the fabric where the outlines are or paint won't go through when one comes to use the stencil. When dry the stencil will be ready.

The canvas upon which the outline is to be stencilled is laid on the floor, and the stencil placed on top of it. The paint should be in a pan and should be scrubbed through the stencil with a scrubbing brush. The paint should be water color such as is used by painters in decorating walls. Oil paint mixed with poppy seed oil will work but tends to clog. Oil paint mixed with linseed oil will not work with stencils of this kind.

The stencil is then lifted off and the paint allowed to dry. In the case of the decorations at Clover Gardens, the canvas was given a coat of varnish after the stencilling to bind the outlines, then the colors were painted in in oil paint.

SAN FRANCISCO ARCHITECTURAL CLUB

FROM a letter received from the San Francisco Architectural Club we print the following items: Supervisor Jas. B. McSheehy will address the Club at its meeting of August 1st on the progress made and the work recently completed at Hetch Hetchy by the City of San Francisco, and the consequent advantages to the residents of this City. Hetch Hetchy is where the now famous O'Shaunnessy Dam, one of the world's largest, has recently been dedicated. The completion of this dam has formed a lake some twenty miles in length by three to four miles in width where before existed only a mountain gorge through which flowed the Tuolumne River. The waters thus stored will be used as a never-ceasing contribution to our present power, light, and water needs, and those of San Francisco's generations to come. An address by one so familiar with his subject as Supervisor McSheehy is eagerly looked forward to by the members.

The annual prizes given by the Club for Atelier work were awarded on July 20th. Harry Langley was the recipient of the prize for the *Projet*, and Lowell E. Bowen for the *Analytique*. The jury making the awards was composed of Edward Fricke, Ernest E. Weihe, Edward Flanders, Henry Howard, and John B. McCool. This annual prize by the Club has been very effective in creating greater interest and incentive in the class to put their best efforts into their work, and has also helped in keeping the class number up to its present standard.

At the Directors' Meeting held on July 26th, it was decided to give a banquet on September 28th to commemorate the 21st Anniversary of the founding of the Club. While plans are yet in process of formulation, it is proposed that all Charter Members of the Club who can attend shall be the Honored Guests of the evening, and presented with a certificate entitling them to Life Membership. The Entertainment Committee, headed by Wilton Smith, are now working out the final details, and announcement thereof will be made in due time.

Lawrence H. Keyser was elected Treasurer for the ensuing year at the last business meeting, taking over the duties of the office so efficiently handled by John A. Peterson during the past two years. Upon his retirement, Mr. Peterson was given a warm vote of thanks by the Club for his good work in its behalf. Although no longer an officer, "Pete" will not soon be able to break himself of his habit of working for the interests of the Club. He is

so constituted that his good habits grow stronger with the passage of time.

William Rowe and J. B. McCool were elected at the same meeting to fill the places in the Board of Directors vacated by the retirement of Directors Lloyd Cole and Harold W. Weeks. The retiring Directors were likewise commended for their good services while members of the Board.

The Officers of the Club for the coming year are as follows: President, Mark T. Jorgensen; Vice-President, Edgar B. Hurt; Secretary, Carl R. Schmidts; Treasurer, Lawrence H. Keyser; Directors, Felix Raynaud, William Rowe, and John B. McCool.

A plan is under way to form a Free-hand Drawing Class among Club Members, and John H. Geering has been appointed as the Committee to work out the necessary details. A goodly number of signatures have already been obtained to the list of those desiring to participate.

The Paraffine Companies, Inc., have extended a very cordial invitation to the club members to pay a visit to their factories at Emeryville, where they now have one of the most modern and complete roofing plants. The date has not yet been decided upon, but will be shortly after the Club Meeting of August first.

AWARDS IN PARIS PRIZE COMPETITION

THE Committee of the Society of Beaux-Arts Architects for the Paris Prize, of which H. Oothout Milliken is Chairman, have announced the following awards: Placed First and First Medal, Lee Rombotis, University of Pennsylvania, Philadelphia, Pa.; Placed Second and First Medal, Harry K. Bieg, Armour Institute of Technology, Chicago, Ill.; Placed Third and Second Medal, I. Jerry Loeb, Armour Institute of Technology, Chicago, Ill.; Hors Concours, H. Banks Thomas, Sr., Atelier Hiron, New York City; Hors Concours, Rudolph De Ghetto, Atelier Hiron, New York City.

The judgment took place July 17. The subject was, "An Office and Reception Building for the President of the United States."

The Jury of Awards consisted of the following: James Gamble Rogers, Raymond M. Hood, Joseph Howland Hunt, John M. Howells, J. Otis Post, Whitney Warren, Benjamin W. Morris, Henry Bacon, Charles A. Platt, M. B. Medary of Philadelphia, Benno Jansson of Pittsburgh, G. A. Lansburgh of San Francisco, and H. Oothout Milliken, Chairman.

REMODELLING HOTELS

THE issue of *Hotel Management* for August contains a very interesting installment of a serial article that is appearing in that magazine under the title, "Will It Pay Me to Remodel?" The August installment relates to the renovation of the exterior of old hotels to give them an attractive appearance to the public. This article is by Robert D. Blackman, of the Hotel San Remo, New York City, and it describes Mr. Blackman's experiences in renovating and remodelling the outside of the San Remo. It also shows, as an example of renovating, the Hotel Lenox, a small hotel which has been made over and, it is reported, is now feeding four thousand business people every day. This business development is undoubtedly due largely to the attractive treatment of the exterior.

This article and others giving the hotel man's viewpoint and the results of practical experience in operating hotels are well worth reading for they help the architect to a successful solution of hotel problems, and suggest possibilities in the remodelling of hotels throughout the country, that need only to be brought up to date in order to attract a profitable business. *Hotel Management* is published by The Ahrens Publishing Company, Inc., 342 Madison Avenue, New York City.

PENCIL POINTS

CRAFTSMANSHIP AND ARTISTRY

SOME interesting questions on a matter directly affecting the carrying out of architectural work of merit are raised in a letter recently sent out as the result of conferences on Industrial or Applied Arts in America which were called by the Newark Museum Association and held last winter in the Public Library of Newark, N. J., of which John Cotton Dana is director.

From this circular letter of inquiry we quote the following:

"Skilful hands and originating minds have been coming to this country for nearly 300 years. For the purposes of this inquiry, 'skilful hands' here means trained craftsmen and 'originating minds' means designers of form and decoration, who are, in no small degree, inventors.

"Our open door of opportunity has led many thousands of these artists and craftsmen to come to us.

"Yet we are told now, after centuries of immigration, that we sadly need in work of scores of kinds, from brick and terra cotta making to the designing of shoes, the skilful hands and originating minds which once came to us so abundantly.

"The chief reasons for this are two: Our country is not now as inviting to the trained worker and the studious artist as it once was, so the one-time stream of these workers and artists has almost ceased to flow; and, as those who came have grown old and died, their places have not been taken by a native product, for the reason that the American boy drifts inevitably into more profitable things than craftsmanship and artistry.

"And this leads to a question, whose answer as here given is one of the immediate incentives for this letter:

"Why do American boys turn from craftsmanship and artistry? Because neither pays well. By 'pay' is meant here not only a fair living wage; but also, and most particularly, that general recognition, that unspoken title of honor, by which alone can be adequately paid those who are born to excel in fine work of hand and brain, done with tools, or with brush and pencil.

"And the inquiry which this letter carries to organizations, individuals, shops, stores, etc., is this: Have you in your community any groups of persons, organized for whatsoever purpose, for social pleasure, for self-education, for the city's improvement, for religious development, or what not,—any organization which may be willing to say publicly that they wish to honor men of high skill of hand or good power of design?

"Have you in your city organizations which would, in your opinion, make such a declaration if it were suggested to them that they do so? * * * *

"We believe that the buying public can be moved to look with unbiased eyes on the products of American factories and to take pleasure and pride in the fact that those products are from skilled hands and artists' brains of men and women who have been taught in our own schools, and trained in our own studios and shops.

Anyone who wishes to express an interest in this movement or any organization that wishes to endorse the principle for which it stands should address Margaret Coult, Newark Museum Association, Newark, N. J.

WILLIAM HOLABIRD

WILLIAM HOLABIRD, senior member of the firm of Holabird & Roche, died at his home, 1500 Oak Avenue, Evanston, Illinois, at noon on July 19th, after a long period of illness.

The death of Mr. Holabird marks the passing of another one of the great pioneer builders of Chicago's history. He ranked among the foremost architects of the country and was recognized as a pioneer in the designing of buildings of skeleton type which have revolutionized the building industry, not only in Chicago, but throughout the world. It is said that the Tacoma Building, Madison

and LaSalle Streets, was the first building of this type constructed in this country. The Chicago Temple Building at Clark and Washington Streets, is the last of this type designed under Mr. Holabird's direction, both buildings being in Chicago.

Mr. Holabird seems to have been the first to use the sub-basement space in Chicago. The Chicago Tribune Building, at the corner of Madison and Dearborn Streets, is said to have been the first building in Chicago to utilize this basement space.

Mr. Holabird was born in New York State, September 11, 1854. After graduating from the high school in St. Paul, Minnesota, he entered West Point in 1873, and remained there two years. Coming to Chicago, he entered the office of W. L. B. Jenney and remained there a number of years before organizing the firm of Holabird & Roche.

Mr. Holabird was a member of the University, Chicago, Union-League, Mid-Day, City and Glenview Golf Clubs. He was also a member of the Loyal Legion and was a Knight Templar in the Evanston Commandery.

The firm has to its credit a long list of great public and mercantile structures designed under the direction of Mr. Holabird. Among many others are the University Club, Cook County Building and City Hall, McCormick Building and other office buildings, Hotel LaSalle, Sherman House and other hotels, all of Chicago; Grant Park and University of Illinois Stadium.

Mr. Holabird is survived by his widow, Mrs. Marie Augur Holabird, his son, Colonel John A. Holabird, his daughters, Mrs. William Cruikshank and Mrs. John D. Towne.

The funeral was held from his late home, Saturday at 10:30 A. M., July 21st, and interment was at Graceland Cemetery, Chicago.

WILLIAM HENRY KEENAN

WILLIAM HENRY KEENAN, President of the National Slate Association, died July 20. It was Mr. Keenan who offered the resolution on April 20, 1922, that made The National Slate Association a practical possibility and during the time he served as President he worked earnestly with the others in the industry for the development of a stronger "industry consciousness" and for co-operation for the extension of service to the public and the good of the slate industry. Mr. Keenan was highly esteemed by his business associates, as is shown by their choice of him as head of their newly-formed association and by their approval of the constructive work in which he took the lead from the time of his election to the office of President of the Association until his death.

Mr. Keenan was born in Rutland County, Vermont, and had an understanding of the viewpoint of the two major producing sections of the industry. He had been actively engaged in every branch of the slate industry.

Mr. Keenan had apparently almost recovered from an appendicitis operation when he succumbed to an acute heart attack. The funeral was held at the home of Philip Keenan in Bangor, Maine, July 24, Mr. Keenan's fifty-sixth birthday.

PERSONALS

HAROLD THORP CARSWELL, of Walker and Carswell, Architects, has opened an office at Room 1101, Jefferson Building, 1015 Chestnut Street, Philadelphia.

G. E. McDONALD, SR., G. E. McDONALD, JR., AND CHAS. T. McDONALD have formed a firm under the name of McDonald, McDonald & McDonald, Architects and Engineers, with offices at 902 Denton Building, Cincinnati, Ohio, and 67 East Eighth Avenue, Columbus, Ohio.

ARTHUR T. REMICK, Architect, has removed his offices to 47 West 43rd Street, New York.

PENCIL POINTS

CROSS REFERENCES

WE HAVE received a letter from A. M. Allen, Balboa, Canal Zone, from which we print the following extracts:

"I was much interested in the articles on specification writing; read nearly every one of them. * * * I was somewhat surprised that none of the writers seemed to emphasize the value of cross references in specification writing.

"My experience has been that cross references on all subjects that affect more than one branch of the specifications are not only of valuable assistance to the superintendent carrying out the work but greatly reduce the chances for dispute as to the true intent and meaning of the specifications, thus cutting down the chances for claims for extras.

"I should like to know what some of the specification writers in the big offices think on this subject."

THE ENGINEERS AND ARCHITECTS CLUB OF LOUISVILLE, KY.

AT OUR request the Secretary of the Engineers and Architects Club of Louisville, Ky., Mr. George W. Hubley, has supplied us with the following information and news about the Club:

"The Engineers and Architects Club of Louisville was organized in 1891, its purpose being 'the professional improvement of its members, the encouragement of social intercourse among engineers and architects, and the advancement of Engineering and Architecture in all their branches.'

"The Club has the distinction of being the oldest of its kind in the State, being one of the few in the country in which engineers and architects are affiliated. The membership is divided into active, associate, junior and non-resident members. The roster for 1923 has a total of 250 names on it.

"The annual meeting of the Engineers and Architects Club is always held in January. Regular monthly meetings are held every third Tuesday excepting the months of July and August.

"Due to the activity of the Papers and Entertainment Committee the Club has been fortunate in having subjects of vital interest presented during the past few months. In February, Major General Wm. Sibert explained the technical details of the City of Louisville's plan for the utilization of the Ohio River Falls for power development. General Sibert's talk was the first specific report made of the plans formulated and contained figures of the engineering project.

"In March the Possibilities of Grade Elimination as Applied to the Louisville & Nashville Railroad was dis-

cussed. The principal speaker was W. H. Courtenay, Chief Engineer of the L. & N. R. R. Mr. Courtenay discussed the cost, the time, and other difficulties which would have to be overcome before grade crossings could be eliminated. The Civic Section of the March meeting was handled by E. A. Jonas, prominent newspaper man, whose subject was City Planning. Wit and humor predominated in Mr. Jonas' talk.

"The programs for the April and May meetings offered subjects of consequence to both the architect and engineer. On June 19th the Engineers and Architects Club held its last meeting until September."

THE MAKING OF WORKING DRAWINGS

(Continued from page 32)

arrival at final results are seen. The plan is carefully figured, electric outlets shown, and many other definite indications noted. It is well-presented drawing, especially for a house of the smaller size.

If drawings for smaller work, as illustrated by Figure 6, Figure 7 and Figure 8 were studied and developed in a similar way, the best designs would be the result, with the least amount of drafting labor and cost. Very little intermediate study from the first studies to the finished working drawings is necessary, to accomplish good results. Of course, a great deal depends upon conditions involved.

Dare it be said that if more of our ordinary dwellings, especially of the smaller type, were studied in this way, better results would be had, and not merely "a somewhere to live," but individual homes would be obtained.

Rows and rows of cheap buildings are erected by speculators and others, with no thought of design. Cheap prints are bought for a song, and many buildings erected from the same prints. So called standard houses are plentiful in the market, and advertised under the names of "Bide A Wee," etc., costing \$12,000 or upwards, "to be bought at your own terms," etc. Glowing and glittering "Moving Picture Houses" spring up over night, shrieking with giddiness, and not much better than the side shows of the circus.

In most cities, the building rules prevent dangerous construction and the larger cities have perhaps a larger proportion of well trained architects whose work is good.

Let not the words regarding carelessly designed and cheaply erected buildings throughout the country be misunderstood. They are not intended in a critical way, but as a plea that everyone engaged in the art and science of building construction use the gifts with which he is endowed, to unite in beautifying our buildings.

We are proud of our Nation.

Therefore let the Nation be proud of our work.



Pen-and-Ink Rendering by F. Patterson of a Design for a Country House
William Patterson, Architect

THE SPECIFICATION DESK

A Department for Specification Writers

SPECIFICATIONS FOR CRITICISM.

ACTING on the suggestion of one of our readers, Mr. M. N. Nirdlinger of Nirdlinger and Marlier, Pittsburgh, we have secured a set of architect's specifications for a brick and hollow-tile residence and we are printing this set of specifications in order that they may be criticised by our readers. Last month we printed the fifth installment and in this issue we continue. The object in doing this is to provide material for a discussion that will be helpful to all who have to do with the preparation of specifications by showing up the weak points in this set of specifications.

You are invited to join in and help rip up these specifications. We are withholding the name of the architect from whom we borrowed these specifications and he has entered into the spirit of the thing so you may feel at liberty to criticise them as severely as you like. We hope that you will also present many suggestions for improvement. The good resulting from this discussion will be in proportion to the number of men who join in with criticisms and suggestions, so we ask that you do not depend on the other fellow doing it but write us yourself, then the thing will be a success. Here is another portion of the specifications—let's have your criticism.

PAINTING AND GLAZING:

(Continued)

This contractor is to submit samples of finished woods to the architect for him to make selection of colors, of stains, fillers, paints, etc., as the case may be, and get approval of color, etc., in writing before proceeding with the work.

The various rooms, halls and interior finish will be finished according to their respective classification as set forth on drawings and in those specifications giving the different finishes for the different rooms.

All exterior pine woodwork to receive one prime coat and two after coats, making three coats in all of ——— pure lead and pure linseed oil paints applied separately, allowing each coat to thoroughly dry before the additional coat is put on (Exterior of exterior doors to receive four coats with a good proportion of R—— enamel in last coat.)

Tin, galvanized iron and other metal work will receive one coat of the above paint on top of the priming and second coat that will be put on by the metal contractor.

PORCH CEILINGS:

Ceiling of side entrance and kitchen porch shall receive one coat of water stain, lightly rubbed with sandpaper, then apply two coats of ——— "A" varnish.

STAINED BIRCH WOODWORK:

All birch woodwork that is stained mahogany will first receive one coat of acid stain, sanded lightly when dry, then apply one coat of mahogany paste filler, one coat of shellac lightly sandpapered and two coats of ——— "A" varnish, the first coat being rubbed with hair cloth and the finishing coat rubbed to an egg shell gloss.

POPLAR PAINTED WOODWORK AT FIRST AND SECOND STORIES:

Poplar painted woodwork as above mentioned shall receive one prime coat of oil and turpentine in equal proportions, then one coat of white shellac which will be lightly sandpapered, then four coats of white lead and zinc, reducing the white lead in each additional coat, then apply one coat of R—— enamel of desired tint, and a final coat of above Co.'s dull gloss enamel. The above

work to be left in a dull gloss finish free from runs and brush marks.

CYPRESS STAINED WOODWORK:

Cypress stained woodwork will be burnt and scratched, then apply one coat of stain of desired shade which will be lightly rubbed, then apply one coat of white lead which shall be allowed to dry for fifteen minutes after which it will be wiped off the surface, then allow it to dry twenty-four hours, then apply one coat of wax rubbing same to a dull gloss.

YELLOW PINE WOODWORK:

Yellow pine woodwork at kitchen, pantry and cold room shall receive one coat of shellac, one coat of ——— "A" varnish and two coats of ——— spar varnish rubbed between coats, the last coat being left in a high gloss. Yellow pine woodwork in attic and back stair hall shall receive one coat of Dutch brown water stain, one coat of shellac and one coat of dull varnish. Yellow pine woodwork at servants' stairways to receive one coat of Dutch brown water stain, one coat of shellac and two coats of ——— "A" varnish left in a high gloss.

MANTELS:

Living room and den mantels will be finished similar to other woodwork in the above rooms. Dining room and all bed room mantels will be furnished and installed at the building under a separate contract. Said mantel will have prime coat only and they shall be finished by the contractor similar to the rooms in which they occur.

BASEMENT WOODWORK:

Basement woodwork shall receive two coats of oil paint of color as directed.

CLOSETS, ETC.:

Closets will be finished similar to the rooms off of which they occur.

MEDICINE CLOSETS:

Interior of medicine closets in second story bath rooms to be finished similar to other woodwork.

BRANDS OF PAINT, FILLERS, ETC.:

All paints to be made up of best colors, ——— white leads, linseed oils, etc. Fillers to be ——— paste filler. Stains and varnishes to be ——— make. Enamels to be ——— make. No substitution will be allowed.

GLAZING:

All basement sash to be glazed with moss obscure glass, the rough side of glass being on the outside. All sash at first and second stories and the entire attic shall be glazed with AADS American glass. All interior doors and exterior doors where glass is shown or marked shall be glazed with AADS American glass. Transoms to be glazed similar to the doors over which they occur. Where obscure glass is called for on drawings count on moss pattern. Such cupboard doors where glass panels are marked on drawings to be glazed with AADS American glass. This contractor will furnish best commercial quality mirrors in medicine closet doors and at such bed room doors as marked on plans, said mirrors will be held in place with wood moulds. This contractor will refer to drawings and door specifications so as to ascertain where wood moulds are used to hold glass in place. All the above glass except where wood moulds are called for to be well bedded, tacked and back puttied in place and left whole upon completion of the building.

It is the intention for this contractor to furnish all glass required in the building excepting where leaded glass is called for.

PENCIL POINTS

THE FOLLOWING WORK WILL BE INCLUDED IN THE COMPLETION OF BUILDING BUT WILL BE LET UNDER SEPARATE CONTRACTS BUT THE WORK WILL BE DONE DURING THE EXISTENCE OF THE CONTRACT COVERED BY THESE SPECIFICATIONS.

Tile work, fireplace work, and all bed room and dining room mantels, bath room tile wainscots and floors and bath room fittings, finishing hardware which will be furnished at the building but which must be put on by carpenter contractor, refrigerator, lighting fixtures, decorating, terra cotta flower boxes, heating plant and galvanized iron lining at den seat, pavements, landscape work and hardwood floors.

SPECIFICATIONS FOR GARAGE

NOTE:

The following specifications are to be governed by all the general conditions set forth in general causes, pages 1 to 5 inclusive.

EXCAVATION:

Excavation to be made in accordance with drawings and to be governed by specifications for residence. Banks to be well braced where trenches are excavated. This contractor will include the necessary excavating for garage floor as required by drawings. All earth taken out of above excavations to be left on property where directed.

CONCRETE FOUNDATION WALLS, FOOTINGS, ETC.:

Footings and foundation walls to be of sizes shown and shall be built of concrete made up of clean washed medium size gravel, sharp clean river sand and either A—, A—, V—, L— or U— P— cement. Whichever brand is adopted same must be used exclusively for the above foundation work. Footings and foundation walls to be true in line and shall be made up in proportions of 1, 2½ and 4, mixed on clean platforms, close to where required and thoroughly wet, well mixed and after same is poured into trenches it shall be well tamped. This contractor to furnish all necessary form work which shall be of substantial construction. Care to be exercised in stopping the above concrete work at night. It is therefore suggested that the concrete be poured in continuous layers of 8" thickness and if stopping is necessary it shall be so done as not to impair the strength of the material.

REINFORCED CONCRETE FLOOR:

Reinforced concrete floor will be built in garage as shown on drawings. This contractor to include the reinforcement as called for on drawings which is a triangular mesh reinforcement which shall be kept 1" up from the bottom of concrete slab. The floor will have a fall towards front of building and the concrete shall be made up in proportions of 1, 2½ and 4 of similar materials specified for other concrete work with a finishing coat in proportions of 1 to 2 made up of selected brand of cement and lime stone screenings producing a granolithic wearing surface. The finishing coat is to be trowelled smooth and to be left free from trowel marks.

BRICK WORK:

The construction of garage walls will be face brick on the outside similar to the face brick used in residence and either common brick or hollow brick for the inside works said wall being 9" thickness. The walls to be well tied together, constructed in accordance with drawings and to be governed by specifications for residence. This contractor to include flues, chimneys, etc., as shown. Where special weight occurs on piers richer cement mortar shall be used.

STRUCTURAL STEEL WORK:

Structural steel to be furnished as required by drawings and to be governed by specification for residence.

SHEET METAL WORK:

Sheet metal work to be furnished as required by drawings and to be governed by specification for residence.

SLATE ROOF:

Slate roof to be furnished as required by drawings and to be governed by specification for residence.

GAS FITTING AND PLUMBING:

This contractor will figure on all gas fitting and plumbing from a point 5'-0" from the rear of residence over to garage. All pipe between the above two buildings to be underground and to be placed inside of tile pipe. Gas pipe to be similar to that specified for residence. Water supply to be — Co.'s galvanized pipe. Drain and waste cocks are provided in residence specification. Gas pipe to be brought to garage heater location. Water supply to be brought to outlet at which point approved faucet with threaded end for standard size hose connection shall be provided. This contractor will include the carrying over of rain conductor lines and bell trap line to residence sewerage, installing the above underground work in accordance with City Laws as well as similar to this class of work specified in residence.

ELECTRICAL WORK:

This contractor will include garage work from a point 5'-0" from rear of residence over to garage counting on underground work from residence to garage. He will furnish and install electrical wiring as required by drawings, the work to be governed by specification for residence. This contractor to include drop cords and sockets at all inside garage outlets. The garage wiring will be controlled from residence tabletboard. A certificate for the above garage wiring will be demanded the same as called for for residence.

CARPENTER WORK:

The general contractor will furnish and install all rough hardware. All lumber to be of sizes noted on drawings and to be governed by specification for residence. All exterior mill work to be in accordance with drawings and to be governed by specifications for residence.

WINDOW FRAMES:

Window frames to be in accordance with drawings and to be governed by specification for residence except that more simple details will be adopted.

SHEATHING:

Entire roof to be sheathed similar to specification for residence.

DOOR FRAMES:

Main entrance door frame to be 2" thick, moulded and to be of No. 1 white pine, per drawings and details.

DOORS:

Main entrance doors to garage to be of designs shown 2" thick at stiles and built up in approved manner with thoroughly dried material according to drawings and full size details, which includes glass panels, wood panels, etc. The glass panels will be glazed in place by painting contractor.

MAIN ENTRANCE GARAGE DOOR TRACKS, HANGERS, ETC.:

Contractor will count on — — — — — Manufacturing Co.'s door track, hangers, hinges, fasteners, guides and locks of their best type suitable for the doors shown on drawings, it being the object that the two doors on either side be locked independently of the two on opposite side. Cuts of above hardware to be submitted to and approved by architect before same is ordered.

INTERIOR FINISH:

Such interior finish required to be of stock pattern white pine.

PENCIL POINTS

PAINTING AND GLAZING:

Painting of exterior of garage to be similar to residence specification. Interior painting will consist of two coat work on all woodwork. All glazing to be similar to specification for residence which calls for AADS American glass.

ITEMS TO BE LET UNDER SEPARATE CONTRACT:

Garage heater, finishing hardware excepting hardware for main entrance garage doors, outside paving and landscape work.

FINALLY:

Do all that may be required to fully complete the work whether particularly specified or not, in a manner satisfactory to the architect and owner. Certain things follow naturally in a well constructed building and must be considered. If the contractor sees any oversight in the above specifications, they must be reported immediately to the architect, as he, the contractor, will be held responsible for the correction of executed work, whether specified in particular or not.

(The End)

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Latin Tiles.—Handsome duotone brochure with colored frontispiece. Describes completely and illustrates fully roofing tiles of special patterns suitable for many uses. Detail drawings and specifications. 88 pp. 9 x 12 in. Gladding, McBean & Co., Crocker Bldg., San Francisco, Calif.

Steel Office Equipment.—Catalog No. 763 describing complete line of steel equipment for offices, banks, commercial buildings, etc. Many tables and illustrations. 130 pp. 8½ x 11 in. Art Metal Construction Co., Jamestown, N. Y.

Business Floors.—Booklet illustrated in color covering subject of flooring for offices, public buildings, banks, hotels, stores, residences, theatres, churches, schools, hospitals, etc. 48 pp. 6¼ x 9¼ in. Armstrong Cork Co., Lancaster, Pa.

Atlantic Terra Cotta.—Monthly brochure for architects and draftsmen. July number illustrates the Pershing Square Building, York & Sawyer, architects. Atlantic Terra Cotta Co., 350 Madison Ave., New York.

Beauty Plus Service in Floors.—New specification booklet on the subject. Covers methods of laying flooring and care. 16 pp. 6 x 9 in. Southern Pine Association, New Orleans, La.

Stair and Sidewalk Hazards.—Illustrated data sheet covering subject of anti-slip treads for various uses. American Abrasive Metals Co., 50 Church St., New York.

Through the Ages.—Monthly magazine on the subject of marble, with many full page plates showing both antique and modern examples. 68 pp. 8½ x 11 in. National Association of Marble Dealers, 242 Kirby Bldg., Cleveland, Ohio.

Wrought Iron Pipe.—Bulletin No. 1 covering manufacture and uses of wrought iron pipe for many different services. 32 pp. 8½ x 11 in. Reading Iron Co., Reading, Pa.

Waterproofing Handbook.—Reference book covering the subject subdivided into four parts. Complete specifications for all waterproofing problems. 72 pp. 8½ x 11 in. General Fireproofing Co., Youngstown, Ohio.

Published by the same firm, "Quality Office Furniture," illustrated catalog with color plates covering complete line of equipment for offices, banks, commercial buildings, etc. 96 pp. 8½ x 11 in.

Modern Wood Finishing.—Brochure with color plates covering treatment of all native woods. Specifications, etc. 68 pp. 8½ x 11 in. E. I. duPont de Nemours Co., Paint & Varnish Division, Philadelphia, Pa.

Ventilight Shade Adjuster.—Data sheet describing a device having wide application in homes, hospitals, public buildings, etc., for improved light and ventilation. The Ventilight Co., 16 South 3rd St., Columbus, Ohio.

Wall Paper.—Monthly magazine illustrated in color, devoted to wall paper, decoration, etc. Wall Paper Mfrs. Assn., 461 Eighth Ave., New York City.

Beautiful Woodwork.—Brochure illustrated in color covering paneled walls, beamed ceilings and polished floors. North Carolina Pine Assn., Norfolk, Va.

Sample Books.—Slate surfaced roofings and shingles and complete line of roll roofings have been arranged in sample book form for the convenience of architects, draftsmen and specification writers. Also sample books of battleship linoleum, inlaid linoleum and printed linoleum. Certain-teed Products Corp., Pershing Sq. Bldg., New York.

Elevator Signal Accessories.—Data sheets containing complete information on the subject; also night service annunciators, electric position indicators and starter's call back. Elevator Supplies Co., 1515 Willow Ave., Hoboken, N. J.

Data Portfolio on Asbestos Lumber, Roofing, Shingles, etc.—Complete material for specification writers. Ask for architects' portfolio. Asbestos Shingle, Slate & Sheathing Co., Ambler, Pa.

The Fire on the Hearth.—Catalog P. Attractive booklet on the subject of fireplaces and fireplace construction. Diagrams and working drawings. 16 pp. 5½ x 8½ in. H. W. Covert Co., 137 East 46th St., New York City.

G. & G. Ash Removal Equipment.—Pamphlet No. 280. Illustrates and describes the equipment used with the G. & G. Telescopic Hoist. Of special interest to architects will be the half size section through the G. & G. Sidewalk Door Frame, showing an unusual design of a door which is watertight. Gillis & Geoghegan, 548 W. Broadway, New York City.

The Regulation of Temperature and Humidity.—Complete catalog, handbook and specification guide, showing in detail the entire line of Johnson Temperature Controlling Devices for all types of buildings. 64 pp. 8½ x 11 in. Johnson Service Co., Milwaukee, Wis.

Plumbing Fixtures.—The complete line of Kohler trade-marked plumbing ware is described in their 216 page catalog. 7½ x 10½ in. They also furnish a Roughing-in Measurement Binder, size 5 x 8 in., containing loose leaf sheets on all staple fixtures. Kohler Co., Kohler, Wis.

Blue Printing Machinery and Accessories.—Catalog M-25. Covers every phase of blue print making and equipment for accomplishing the best results. Invaluable in every large drafting room. 64 pp. 6 x 9 in. The C. F. Pease Co., 803 No. Franklin St., Chicago, Ill.

Dampproofing.—Specification sheet covering descriptions and specifications of compounds for dampproofing interior and exterior surfaces. 8½ x 11 in. L. Sonneborn Sons, Inc., 114 Fifth Ave., New York City.

Batchelder Tiles.—A catalog of mantel designs. Colored frontispiece. 30 full page measured drawings. 8½ x 11 in. Batchelder-Wilson Co., Los Angeles, Calif.

Ben-Ox Interchangeable Devices.—Bulletin illustrating and describing special wiring devices for suspended lighting units. 16 pp. 8 x 10½ in. Benjamin Electric Mfg. Co., 847 W. Jackson Blvd., Chicago, Ill.

Corcoran Tanks.—Illustrated catalog of tanks for all uses, towers, windmills and accessories. Tables of dimensions, capacities, etc., with typical installations. 24 pp. 7½ x 11 in. A. J. Corcoran, Inc., 756 Jersey Ave., Jersey City, N. J.

International Austral Window.—Detail drawings and views of buildings showing installations. 24 pp. 8¾ x 11¼ in. International Casement Co., Inc., Jamestown, N. Y.

Catalog of Drawing Materials.—Complete catalog measurements, papers, cloth, furniture and draftingroom supplies. 384 pp. 6 x 9 in. New York Blue Print Paper Co., 98 Read St., New York City.

The Tale of a Clam.—A story about lime. 16 pp. 8½ x 11 in. Ohio Hydrate Supply Co., Woodville, Ohio.

Swimming Pool Sanitation.—Special bulletin covering this subject with diagrams and illustrations of typical pools. 8 pp. 8½ x 11 in. The R. U. V. Co., 383 Madison Ave., New York City.

Rookwood Pottery.—Loose-leaf portfolio showing applications of Rookwood tile to various types of rooms in different classes of buildings. 9 x 12 in. 60 plates. Rookwood Pottery Co., Cincinnati, Ohio.

Artists' Color and Supplies.—Catalog and price list covering complete line. 52 pp. 6 x 9 in. Winsor & Newton, Inc., 31 East 17th St., New York City.

Measuring Tapes and Rules of Every Description.—Catalog No. 10. Shows complete line of tapes, rules, protractors, etc., for architects, draftsmen and engineers. 122 pp. 6 x 9 in. Lufkin Rule Co., Saginaw, Mich.

Complete Line.—Illustrated handbook covering subject of modern heating. Tables and drawings. Convenient pocket size. 258 pp. 4½ x 7¼ in. United States Radiator Co., Detroit, Mich.

Armco in Picture and Fact.—Complete treatise on subject of rust resisting iron. Tables and much useful technical data. 248 pp. 6 x 9 in. American Rolling Mill Co., Middletown, Ohio.



HOW THEY BUILD

THERE are several angles from which the collection of drawings of construction details published in this issue may well be viewed.

In the first place these drawings contain a great deal of interesting material, for they show how a number of architects in various parts of the country have solved construction problems. Some of these problems are special, while others are met with quite frequently in every day practice. In this mass of material, it is safe to say, everyone can find some helpful suggestions.

The range of subject matter is wide, including details of a built-in dressing table in a boudoir in New York, the ventilator of a hay loft in Minnesota, details of office buildings in Chicago, of a church house in Pittsburgh, details of wooden window sash and trim from Des Moines, Iowa, a number of varied details from San Francisco and Los Angeles, elevator enclosures, stairway details, a bit of the construction of the Standard Oil Building in New York, batten doors in a residence, and a very interesting detail from the drawings for the Lincoln Memorial, Washington, D. C.

The aim in assembling these details has been to show the solution of a great variety of construction problems and so far as possible to select the unusual, but at the same time useful ones.

Though some architects responded to our request that they send in sheets drawn to the right size and in a way suitable for reproduction in our pages, many were not able to undertake the preparation of the material in that manner at this time, but gave us access to their files of working drawings. In these cases we have reproduced the entire sheet when possible without reducing the drawing so much as to make the reproduction illegible, and in many instances we have chosen portions of drawings. Though separated from the other drawings of the set and often fragmentary, these details will, we believe, prove entirely intelligible to our readers.

In some cases we have chosen details that are not as carefully drawn as other less interesting ones in the files of the same office.

Taking drawings from so many offices, drawings different in size and manner of drawing, it has been impossible to secure any approach to uniformity of appearance in the pages devoted to this material. Some drawings were, of necessity, reproduced in half-tone, others could be made in line, so they have been brought together in the way that seemed to cause the least clash of facing pages and without

any thought of precedence or of relative importance in their arrangement.

The emphasis placed on construction details in this issue is the outcome of a strong feeling that this side of drafting room work should have due recognition, and it is our intention to include a few pages of construction details in each regular issue of this journal from this time on. In the past we have published them only intermittently. The purpose is to bring about an interchange of ideas on this subject through the publication of these drawings. The practice of architecture, like the practice of every other profession, progresses through the logical solution of new problems as they arise and through the finding of better solutions of the old problems—these methods becoming contributions to the profession. It is clear that this development can be facilitated through such a medium for the exchange of ideas as the publication of construction details regularly in the pages of this journal. Through the splendid co-operation of those who have loaned drawings for this issue, we have been able to start the ball rolling—now let's keep it going. Send us blue prints of some of your construction details. The bigger the response the better we can make this feature, so let us have your co-operation.

THE DRAFTING ROOM REGISTRY

THE establishment of this Registry, as announced last month, has elicited much favorable comment and a most gratifying response. Draftsmen, specification writers, superintendents of construction employed by architects, contractors, engineers and others throughout the country are sending for registry cards, filling them out and returning them in a steady stream. It is recognized both by architects and by the drafting room personnel that this Bureau, when our records are complete, will be extremely valuable to all concerned.

All those who have not as yet availed themselves of the opportunity to register are requested to send for cards. Remember there is no expense to anyone in connection with this Registry and that all those who are eligible and not subscribers for *PENCIL POINTS* may register as well as those whose names appear on our subscription list. We want our list to be complete and therefore bespeak the co-operation of all elements of the profession. For full particulars see page 122 of this issue.

DRAWING CONSTRUCTION DETAILS

BY PHILIP G. KNOBLOCH

In this article Mr. Knobloch, the author of "Good Practice in Construction," points out some of the more important considerations in the making of drawings showing details of construction and offers some suggestions based on his experience in the preparation of drawings of this kind.—ED.

BEFORE undertaking the preparation of construction details it is well, I believe, to go thoroughly over the $\frac{1}{8}$ inch or $\frac{1}{4}$ inch drawings to determine just what details will be required. Then in making each detail one should first think carefully, taking into account all the conditions to be met in each particular case, making a few pencil sketches at 3 inch scale showing the relation of the parts one to another.

A great deal of help in thinking out a detail may often be obtained by having before one a detail covering a somewhat similar case—a drawing from the office files showing a building previously designed, an office standard detail, or one of the various books containing construction details. While it is not often that a detail may be taken exactly as it is found in any of these drawings, such a drawing provides a good starting point, for it reminds one of many essentials and contains information that one does not always carry in one's mind.

In working out a detail it is important to aim at simplicity, to call for construction that will meet all the requirements satisfactorily without any unnecessary expense for material or labor. It often takes more thought to work out such a detail, and requires more knowledge, than to draw a complicated, unnecessarily expensive detail.

Since a good knowledge of construction is necessary in drawing details, the draftsman who has spent much time on buildings under construction has a great advantage. A year or more on buildings as inspector or assistant superintendent would prove an invaluable experience. I believe that it would be well if it were the regular practice in all offices to send draftsmen to the jobs so that they might see the work under actual construction.

It is seldom that draftsmen see the details built and installed from the drawings made in the office.

Nothing would, I believe, tend so strongly to improve the standard of construction details throughout the profession from a practical standpoint so much as providing opportunities for draftsmen to be on the buildings.

At this point I may say that the man who wishes to draw good construction details will do well to learn as much as possible from the men who have devoted much time to some one branch of construction or to some one class of building materials or class of equipment. Contractors, material men, mill men, men in the service departments of producers of building materials or equipment all have a great deal of value to contribute to one's knowledge of construction. In addition to gaining knowledge through contact with these men, it is well to call upon them frequently for needed information during the drawing of construction details. One should always exercise one's own judgment freely, however, in making use of information and advice from any source. It is

worth while for the man who draws construction details to know the sizes of materials that are kept in stock, drawings that show such knowledge, besides being more useful, command the respect of the mill man.

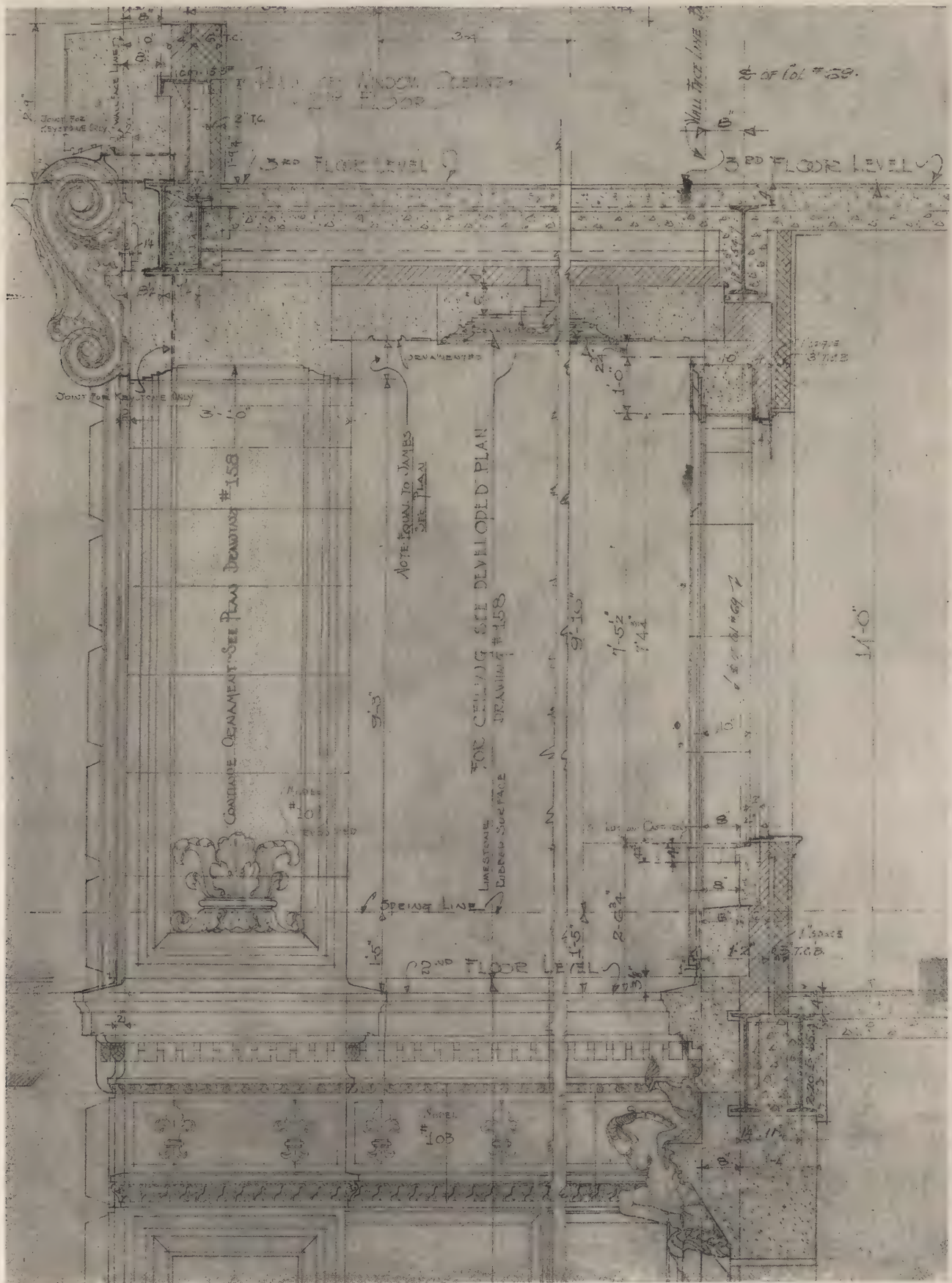
It may be well to say a word here about presentation. Though a drawing of details of construction is not a proper place to attempt elaboration for the sake of appearance, such a drawing should bear the marks of good draftsmanship and can be given a very pleasing appearance without any undue expenditure of time. Perhaps the one thing that contributes most to this end, while making the drawing more easily understood, is the practice of using a comparatively heavy line as a profile around each main portion of the construction, using lighter lines

(Continued on page 79)



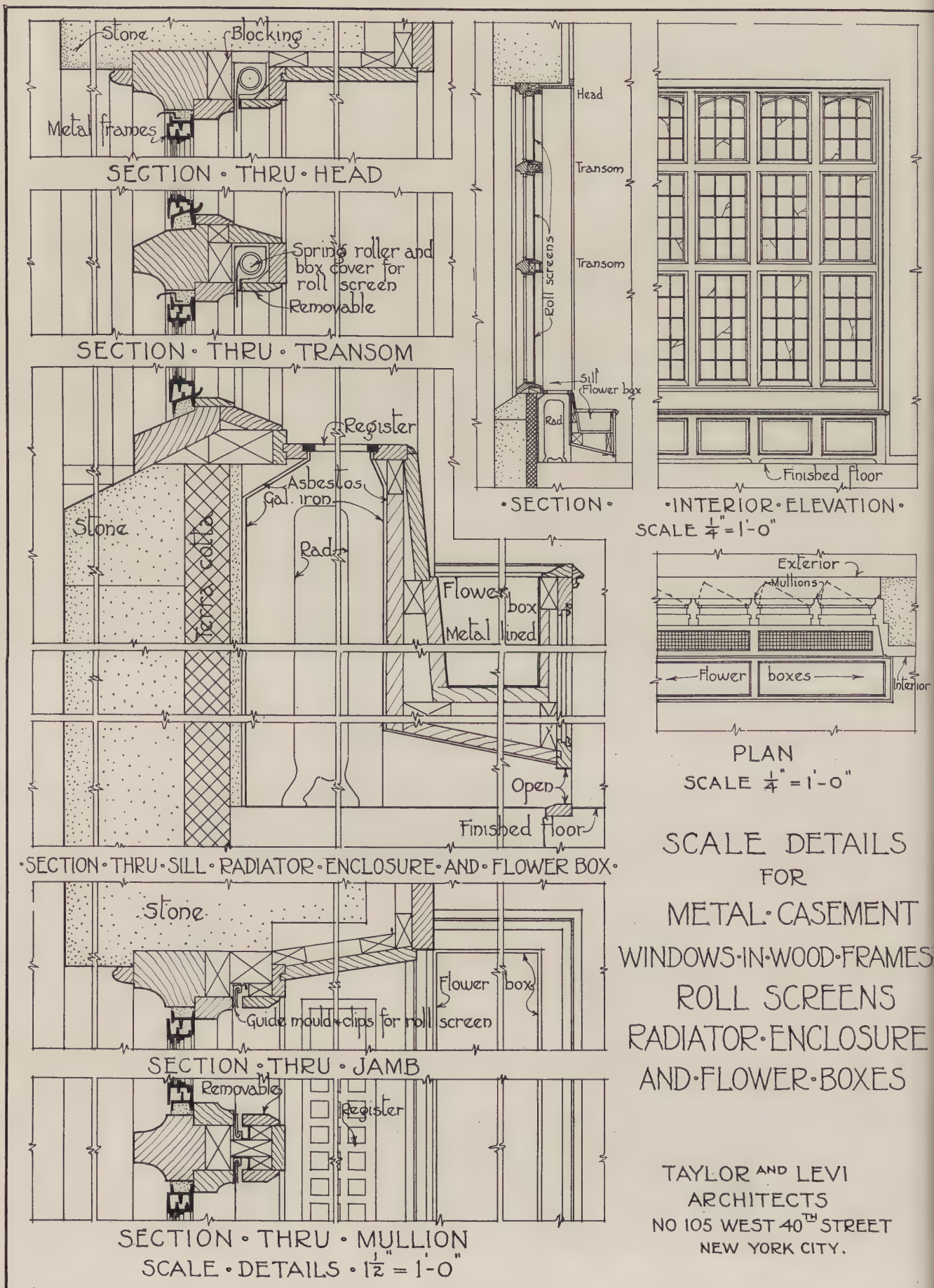
Philip G. Knobloch

PENCIL POINTS



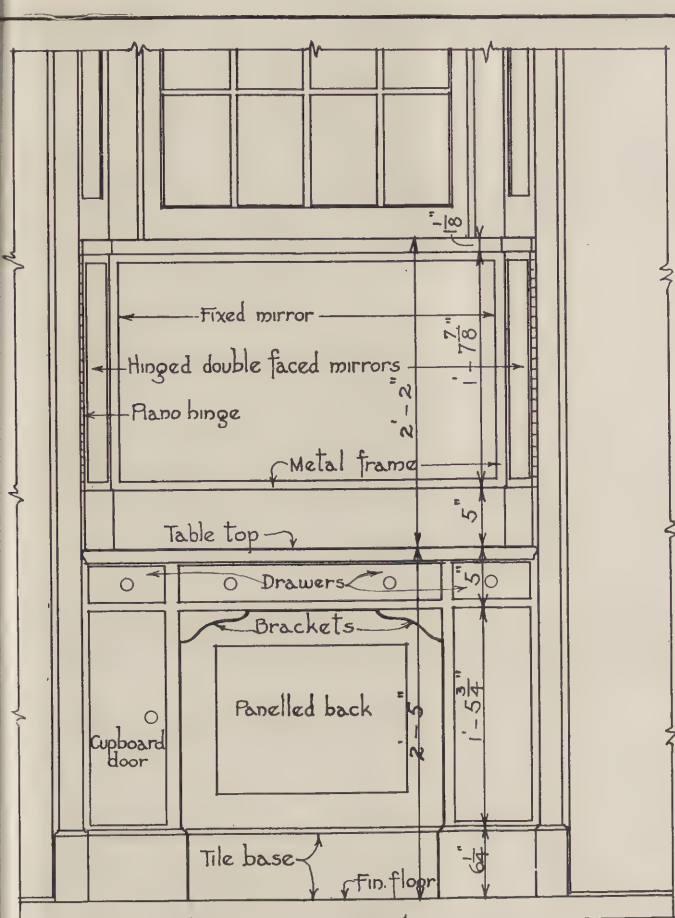
Details of Construction—Standard Oil Building. Carrère & Hastings, Architects.
Shreve, Lamb & Blake, Associated.

PENCIL POINTS

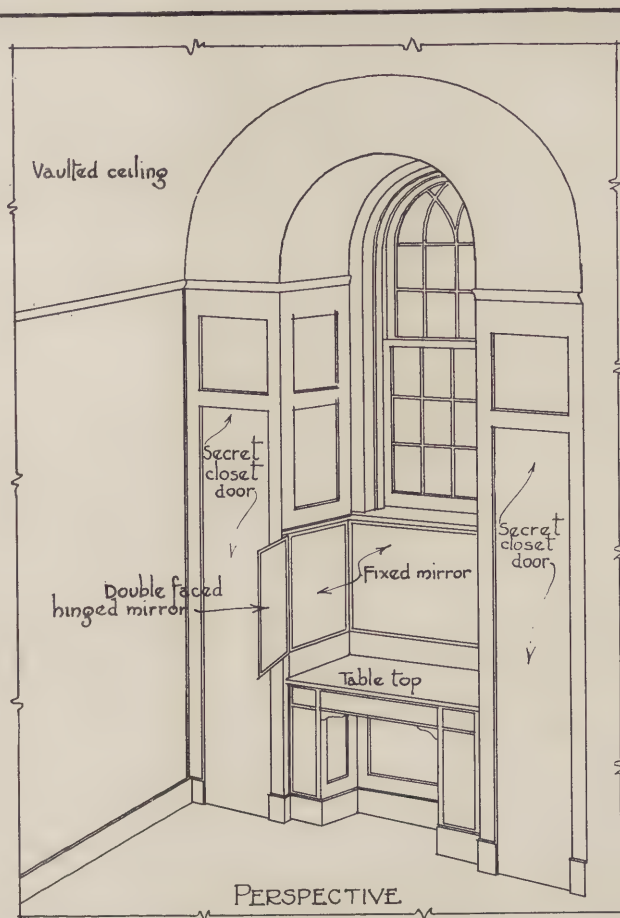


Details of Construction—Metal Casement Windows in Wood Frames, Roll Screens, Radiator Enclosure and Flower Boxes. Taylor & Levi, Architects, New York.

PENCIL POINTS

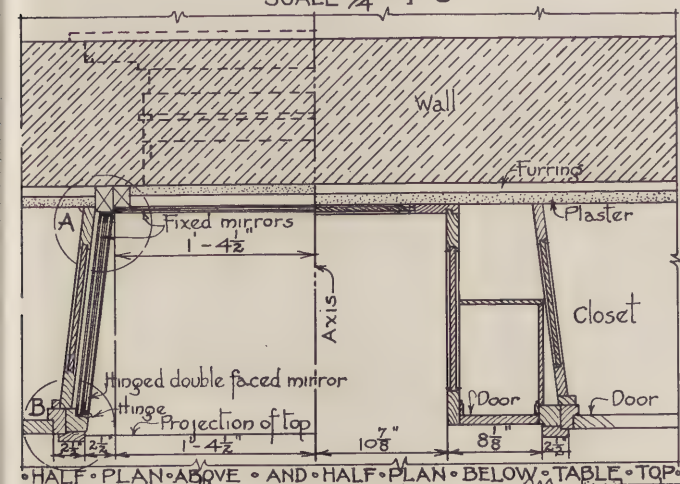


ELEVATION OF DRESSING TABLE
SCALE $\frac{3}{4} = 1'-0"$

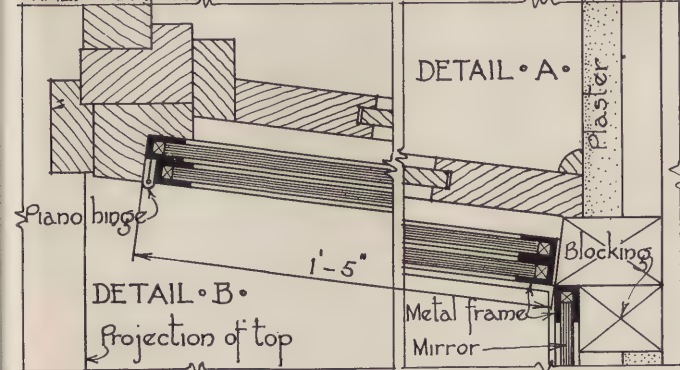


PERSPECTIVE

BUILT-IN
DRESSING TABLE AND MIRRORS

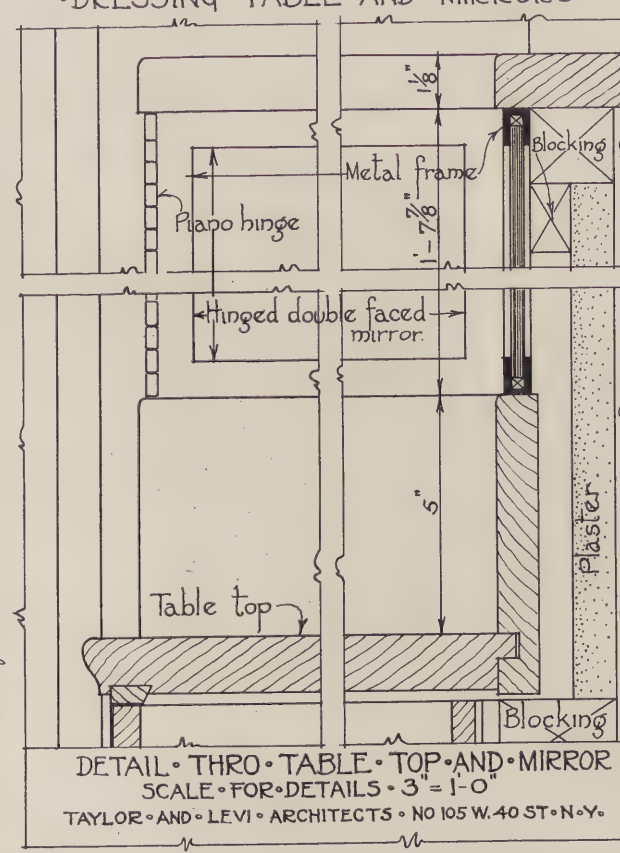


HALF PLAN ABOVE AND HALF PLAN BELOW TABLE TOP



DETAIL A

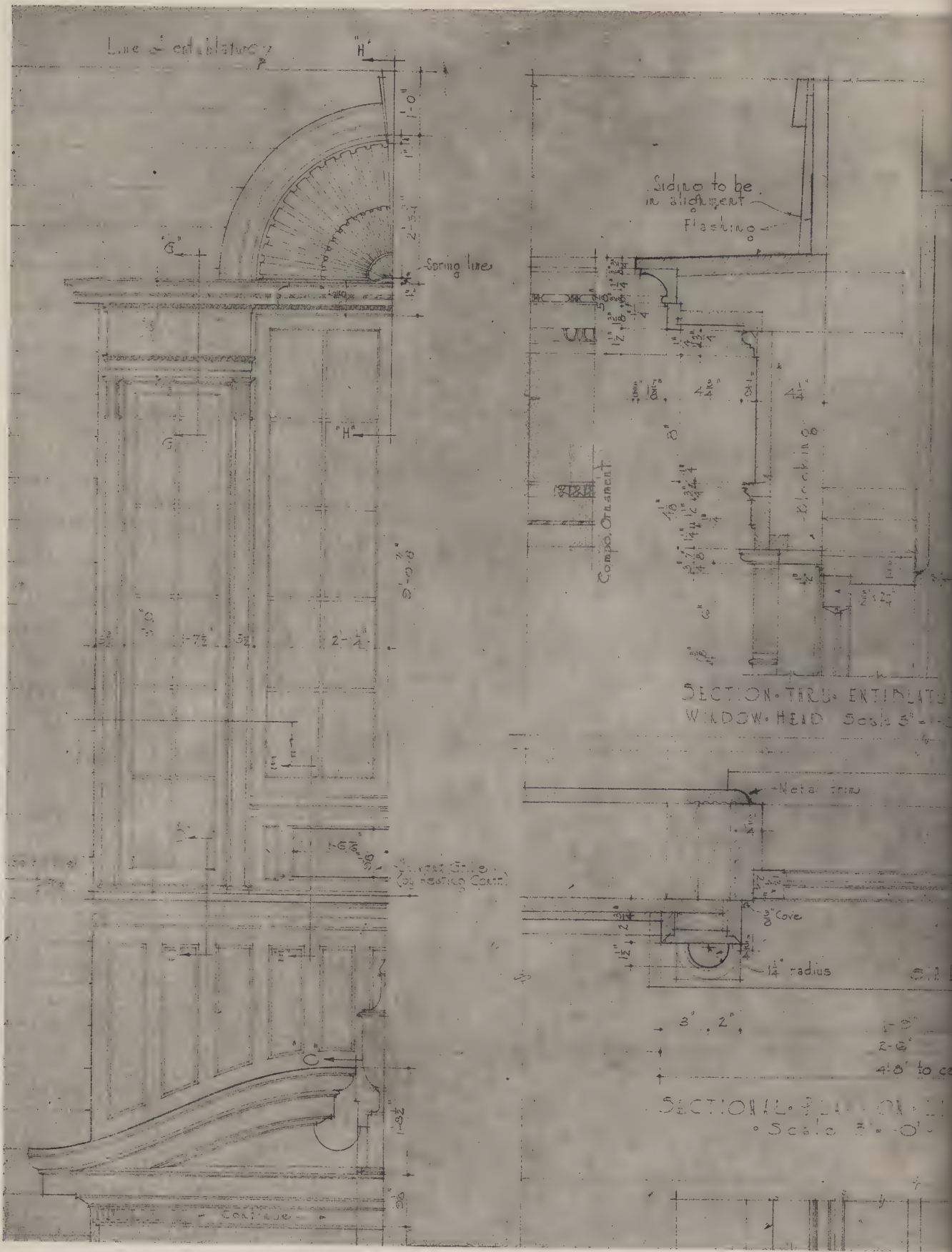
DETAIL B



DETAIL THRO TABLE TOP AND MIRROR
SCALE FOR DETAILS 3 = 1'-0"

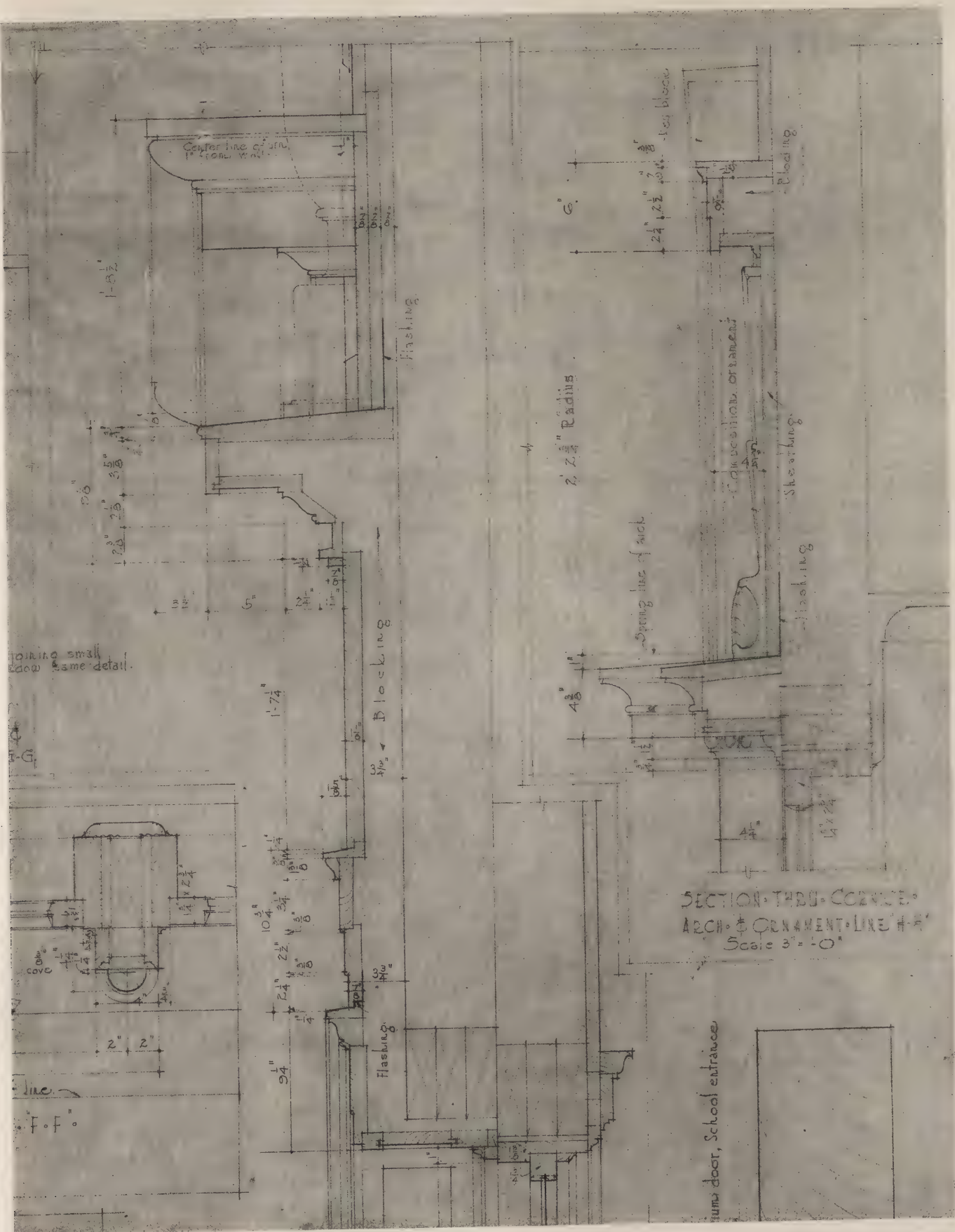
TAYLOR AND LEVI ARCHITECTS NO 105 W. 40 ST. N.Y.

PENCIL POINTS

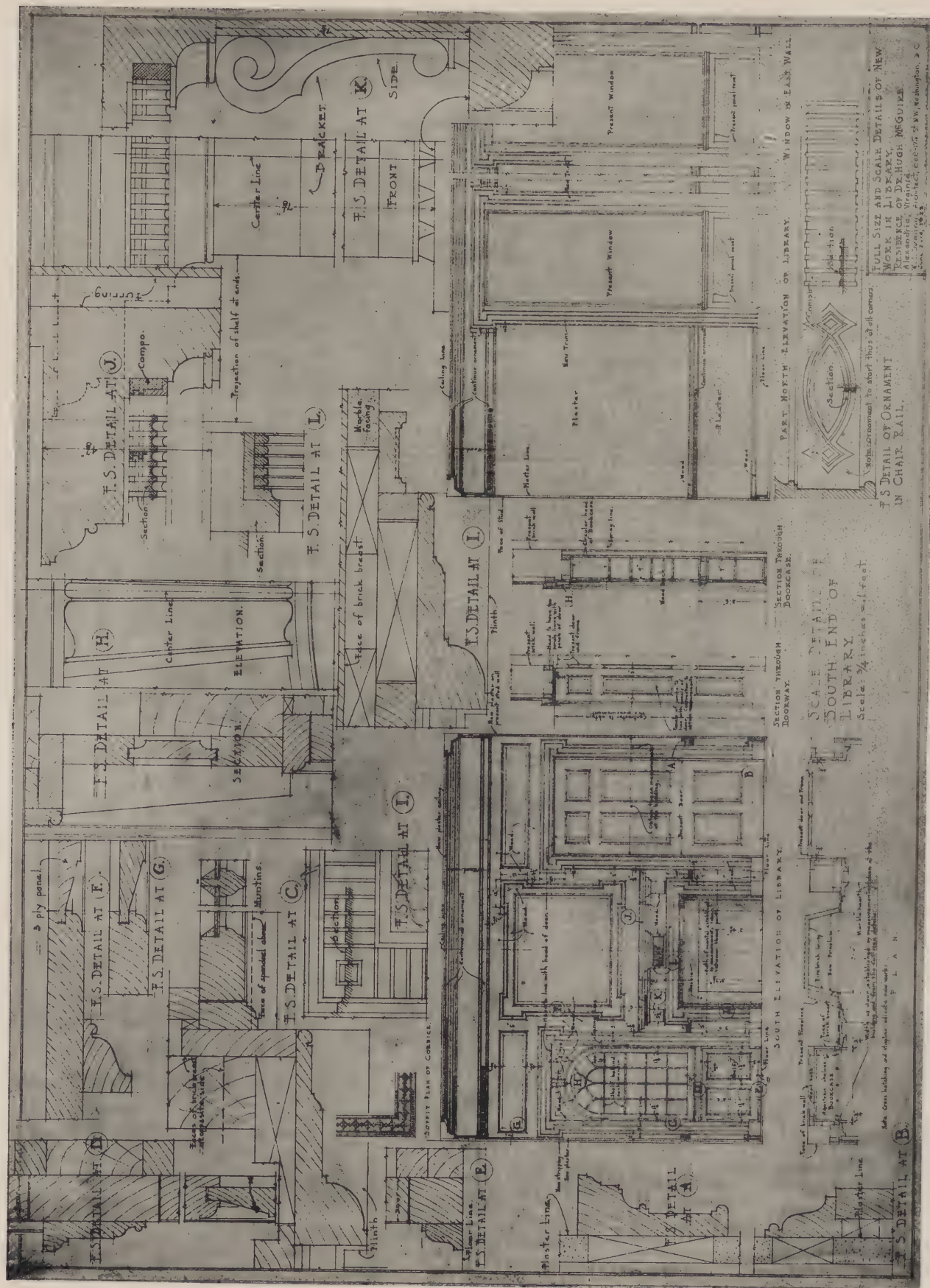


*Details of Construction—Palladian Window. The Gilberton High School.
Peter B. Sheridan, Architect, Hazleton, Pa.*

PENCIL POINTS

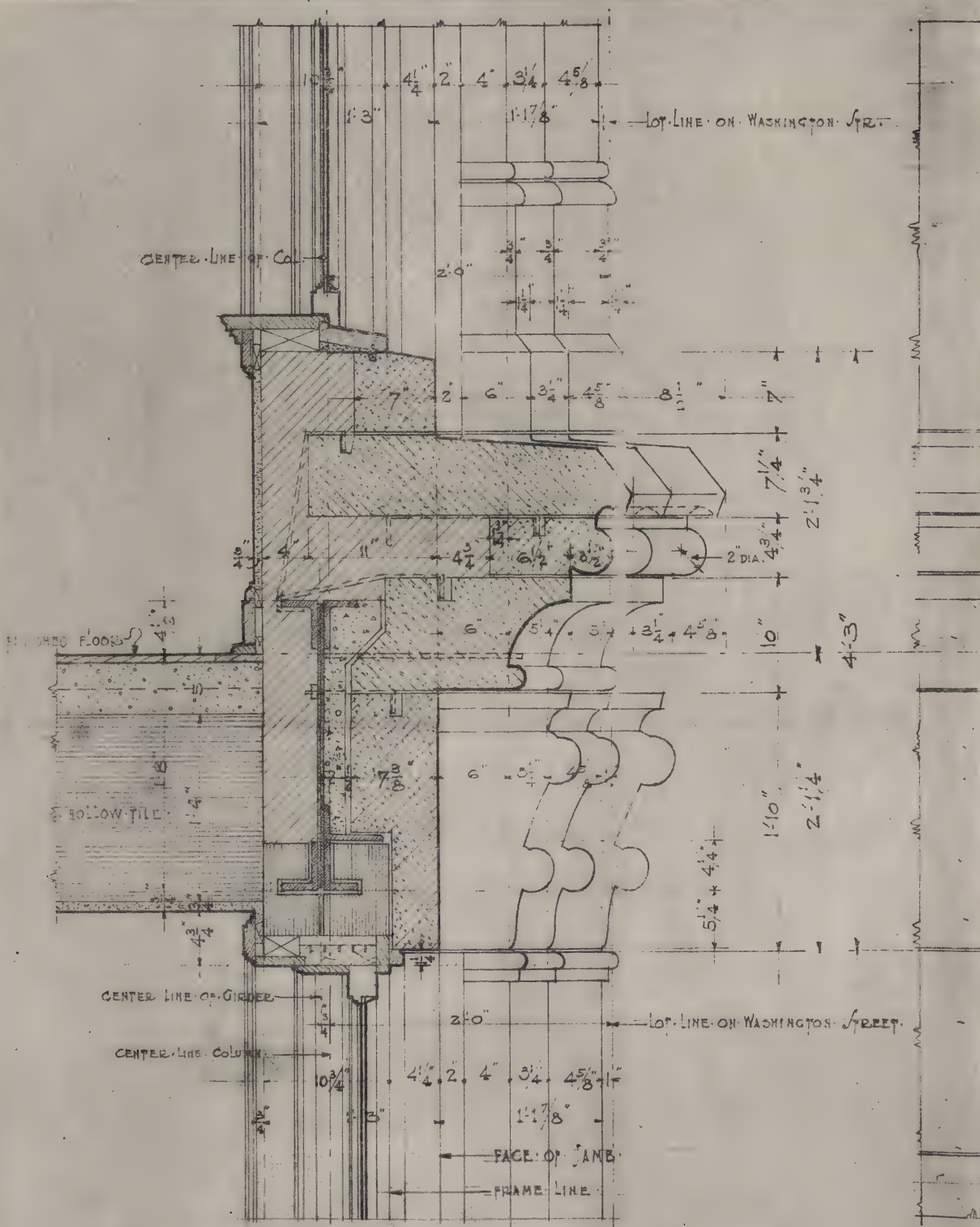


*Details of Construction—Palladian Window, The Gilberton High School.
Peter B. Sheridan, Architect, Hazleton, Pa.*



Details of Construction—Library, Residence of Dr. Hugh McGuire. W. I. Deming, Architect, Washington, D. C.

PENCIL POINTS

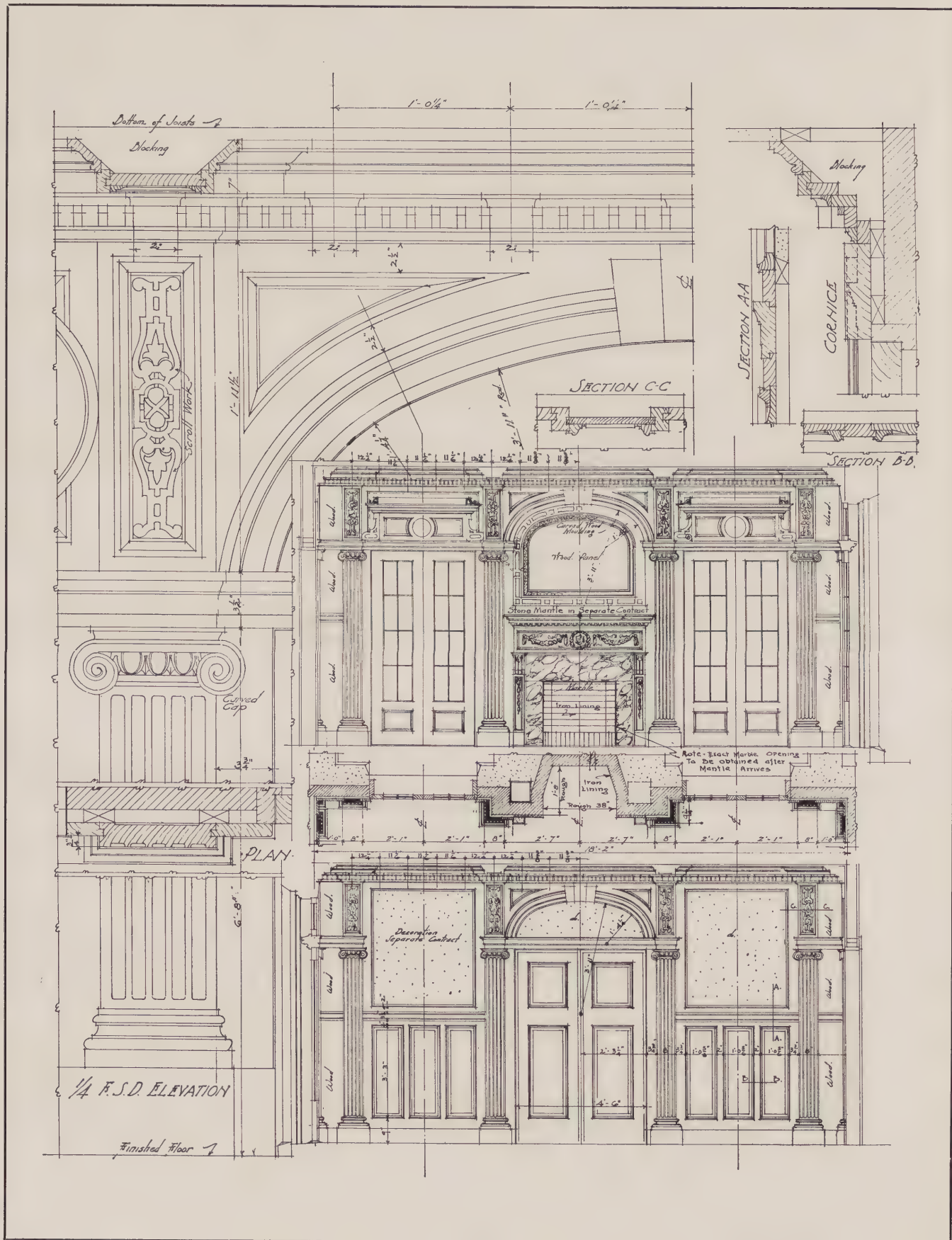


1 1/2" SCALE. DETAIL SECTION THROUGH 19TH STORY SPANDREL COURSE.
BETWEEN COLUMNS NO 12 - & NO 23.

NOTE: SECTION BETWEEN COLS. 1^o 2 & 1^o 3 ON CLARK STREET TO BE THE SAME.

*Details of Construction—Section Through Spandrel Course, Chicago Temple Building.
Holabird & Roche, Architects, Chicago.*

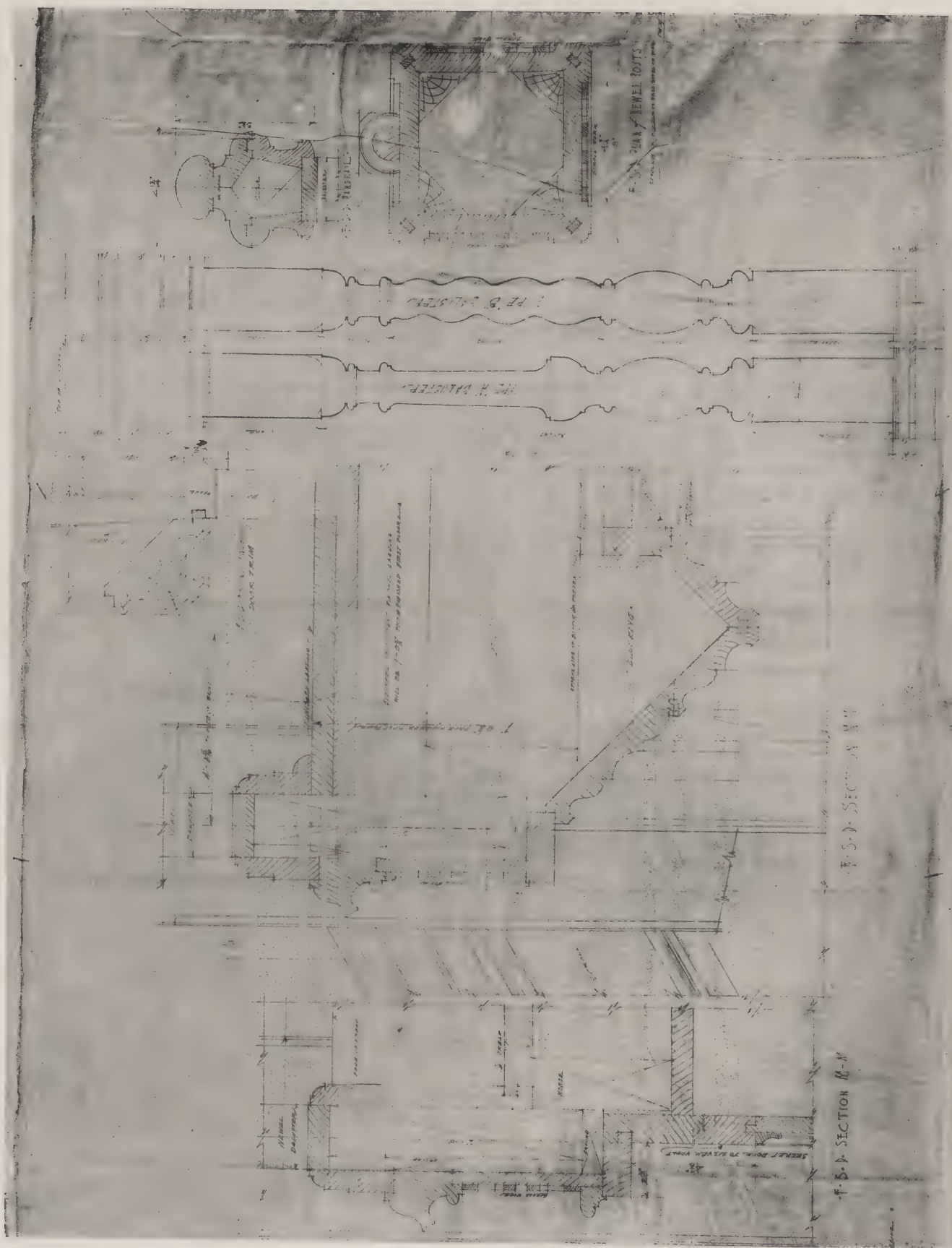
PENCIL PONTS



*Details of Construction—Details of Living Room. Residence for J. L. Kendall, Esq.
M. Nirdlinger, Architect, Pittsburgh, Pa.*

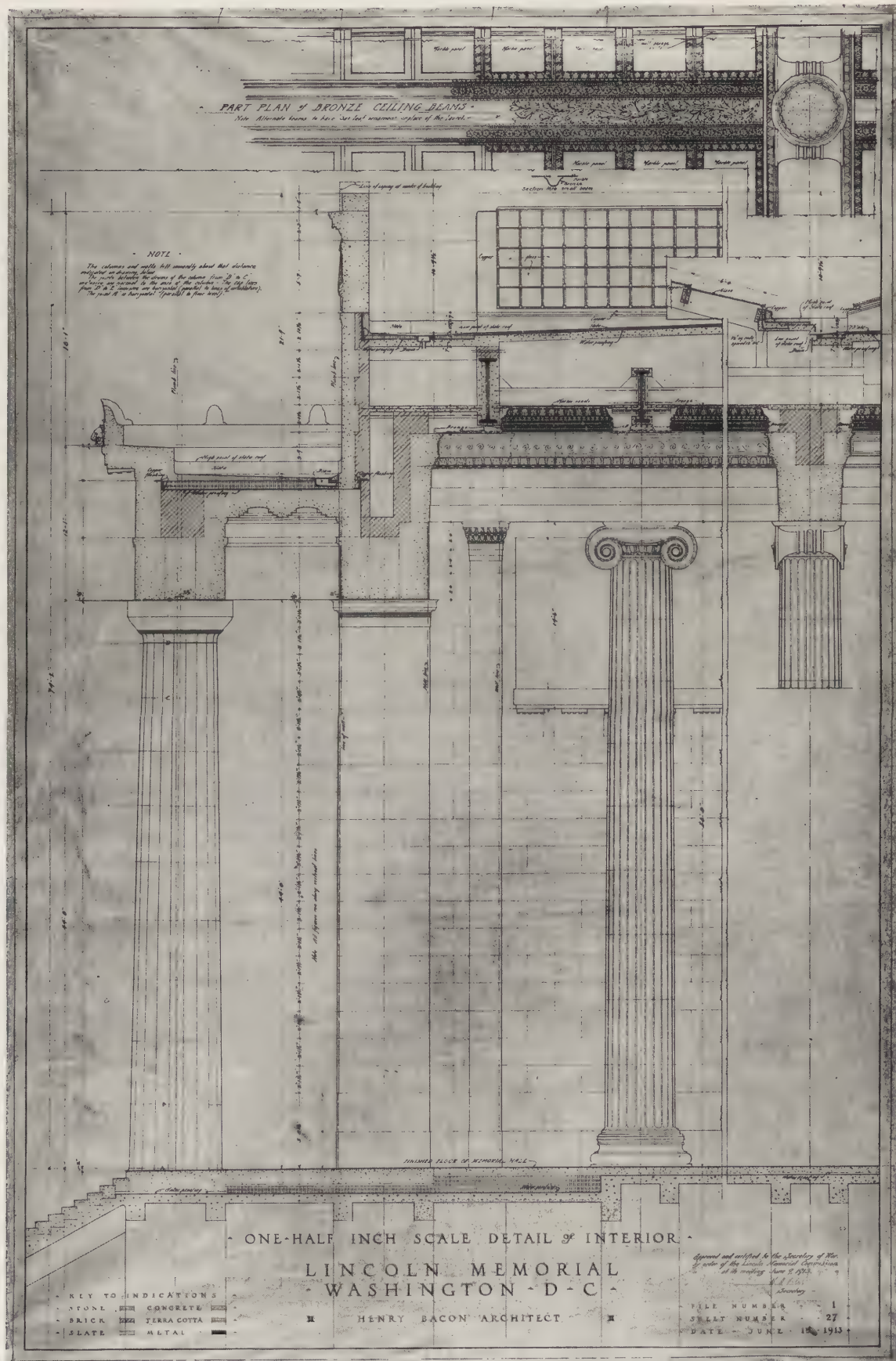
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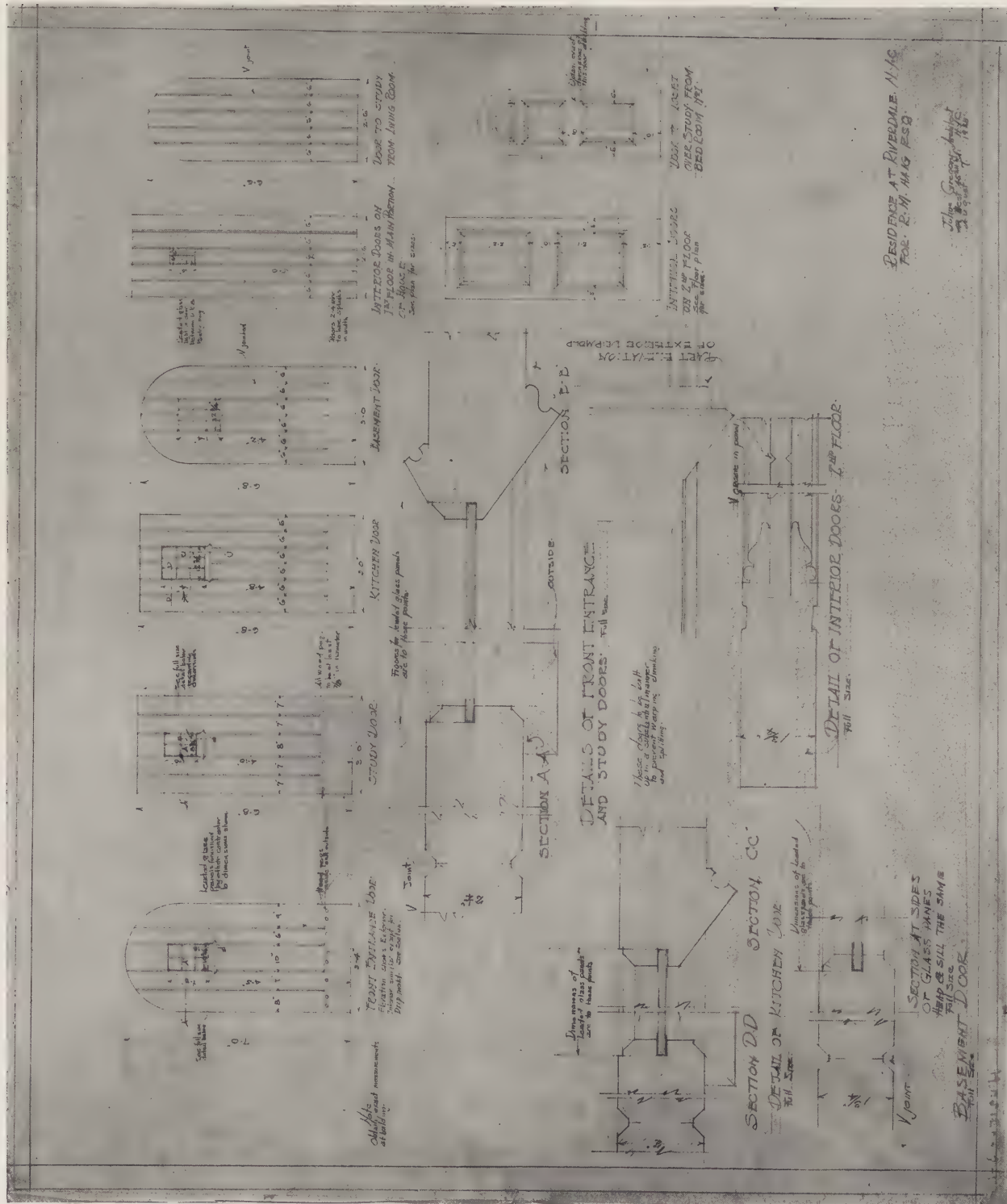


Details of Construction—Stairway Landing, Newel Posts, etc. Residence for J. L. Kendall, Esq. M. Nirdlinger Architect, Pittsburgh, Pa.

PENCIL POINTS

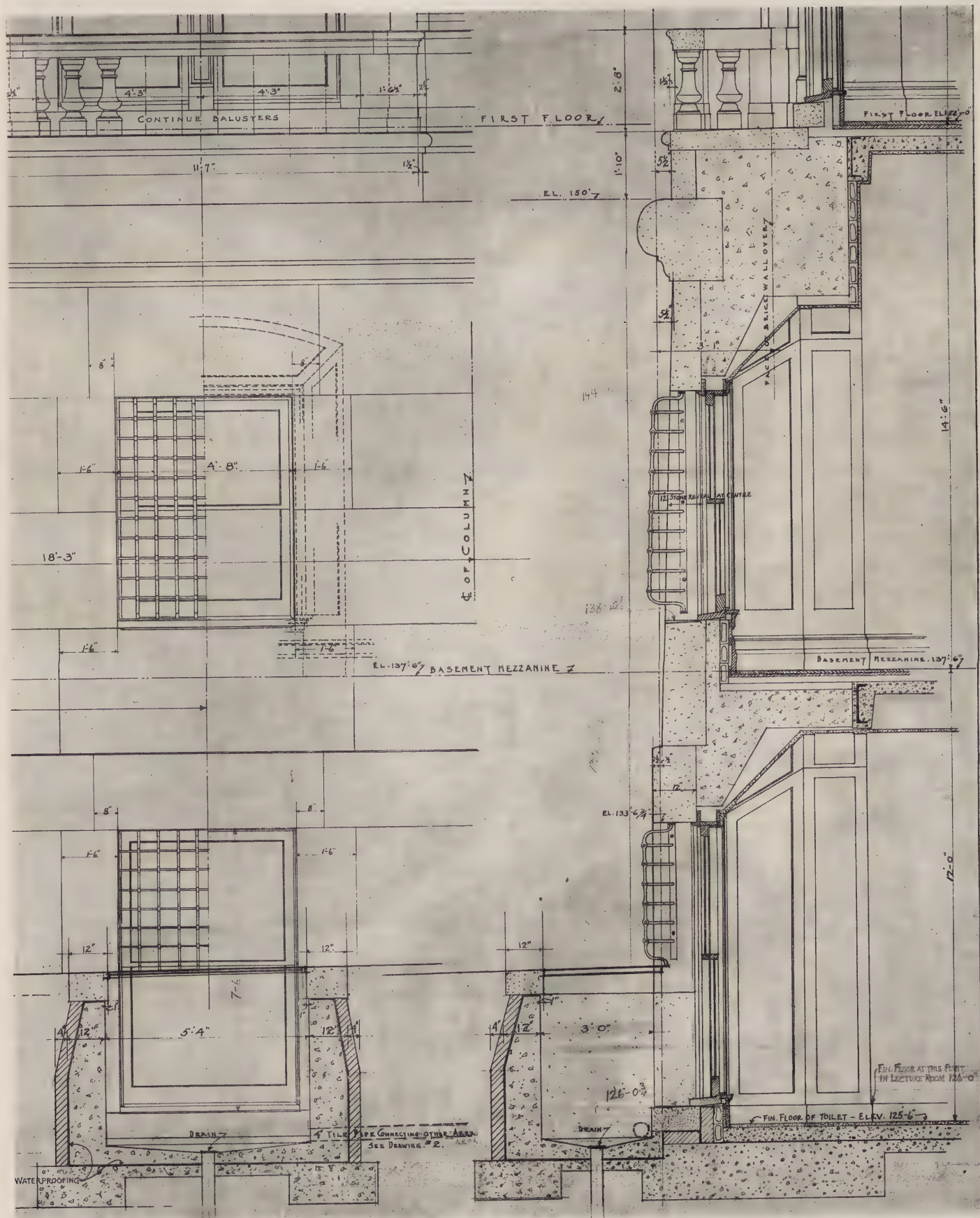


Details of Construction—Lincoln Memorial, Washington, D. C.
 Henry Bacon, Architect, New York.



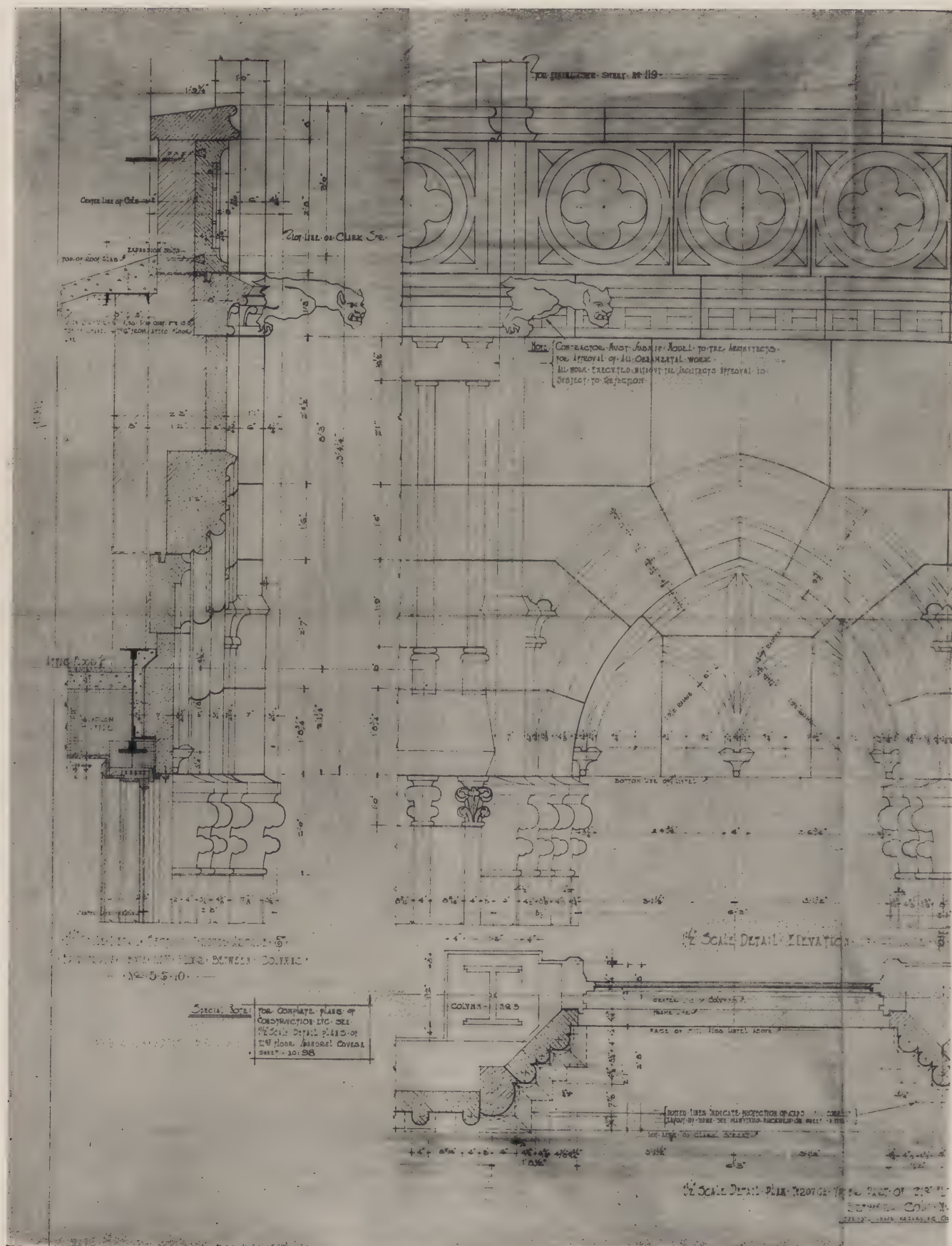
Details of Construction—Doors in Residence for R. H. Haig, Esq. Julius Gregory, Architect, New York.

PENCIL POINTS



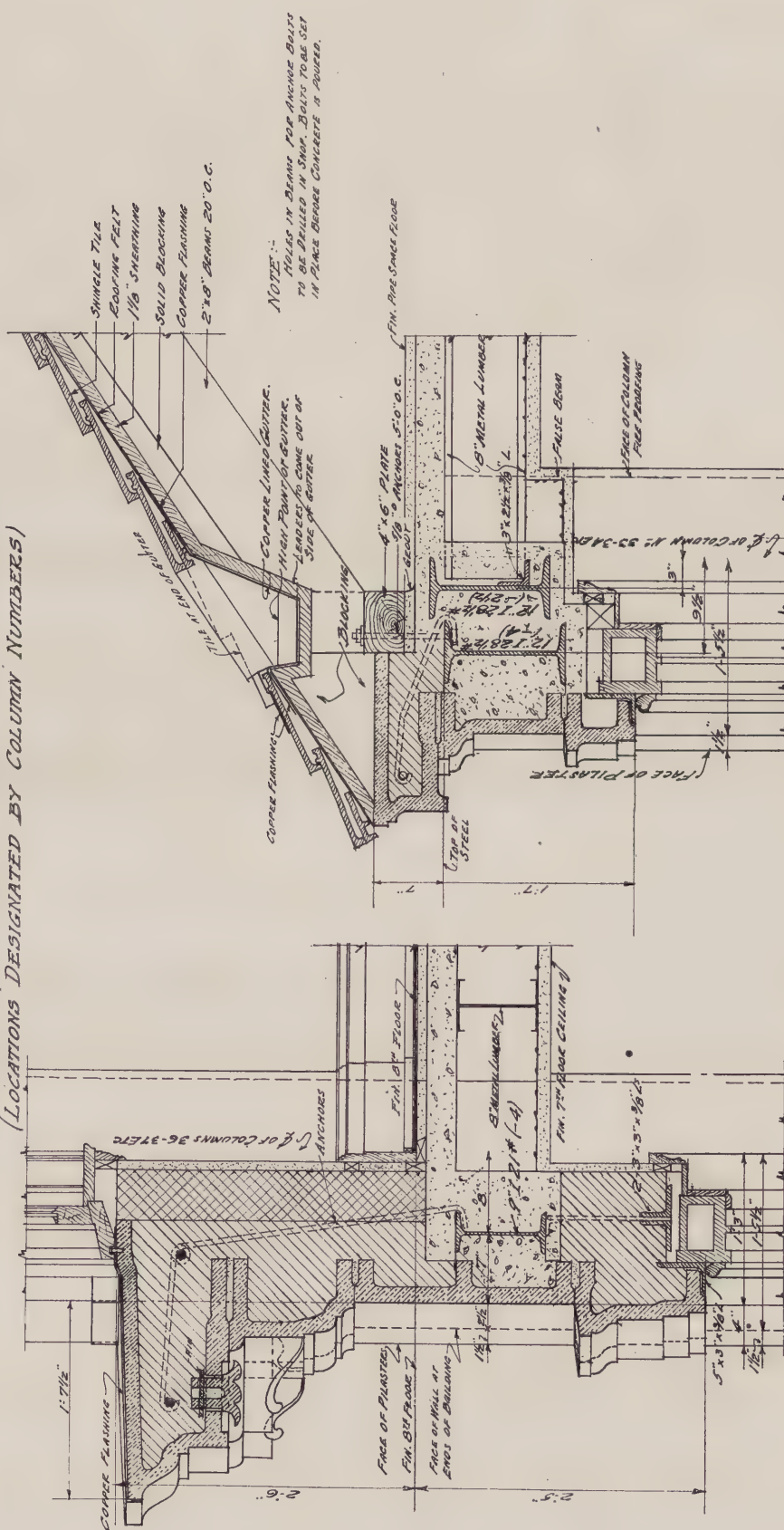
*Details of Construction—Business Building, Columbia University.
McKim, Mead & White, Architects, New York City.*

PENCIL POINTS



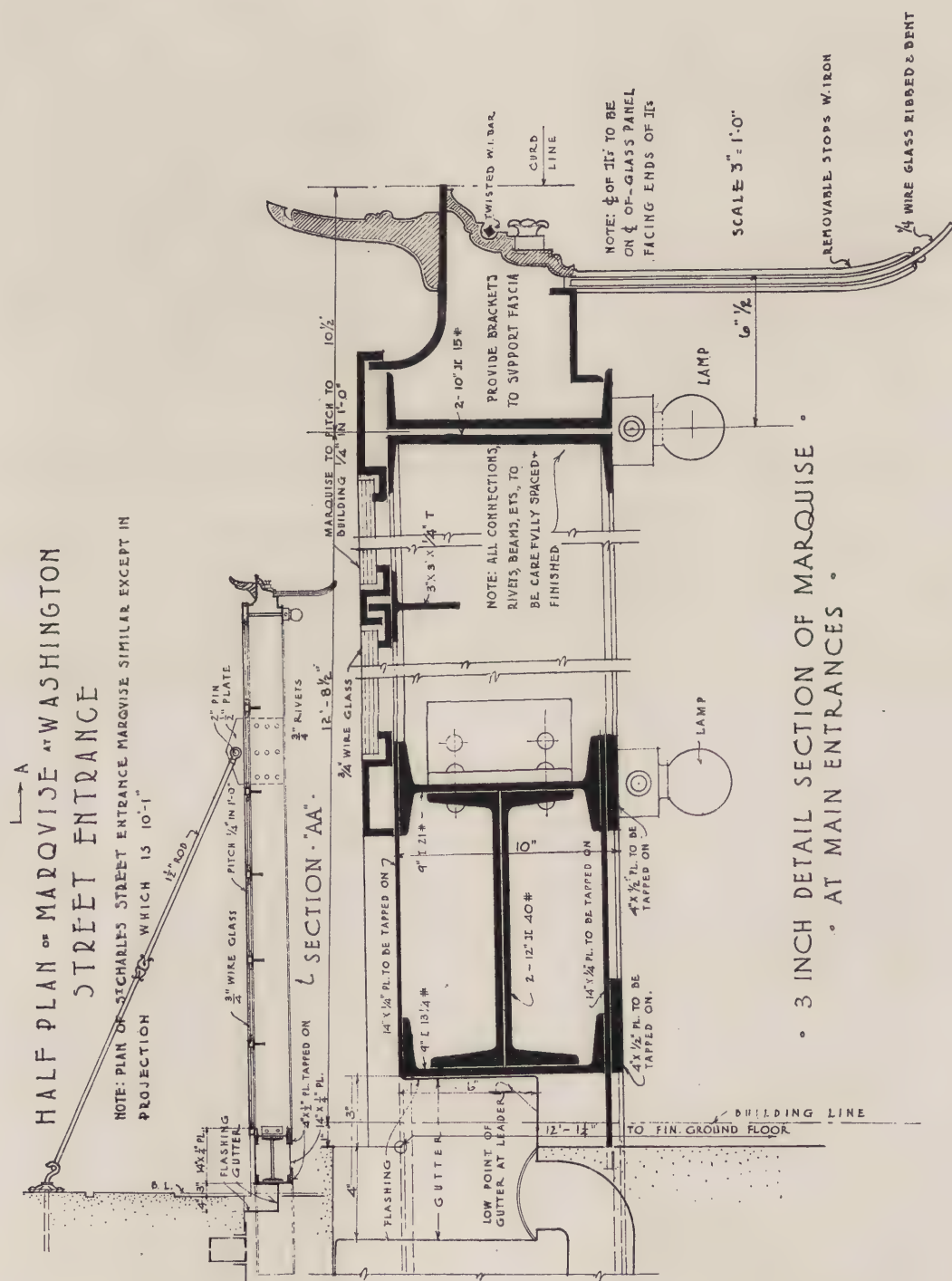
*Details of Construction—Arcade and Balustrade, Chicago Temple Building.
Holabird & Roche, Architects, Chicago.*

SECTIONS THRU TYPICAL FLOORS,
(LOCATIONS DESIGNATED BY COLUMN NUMBERS)



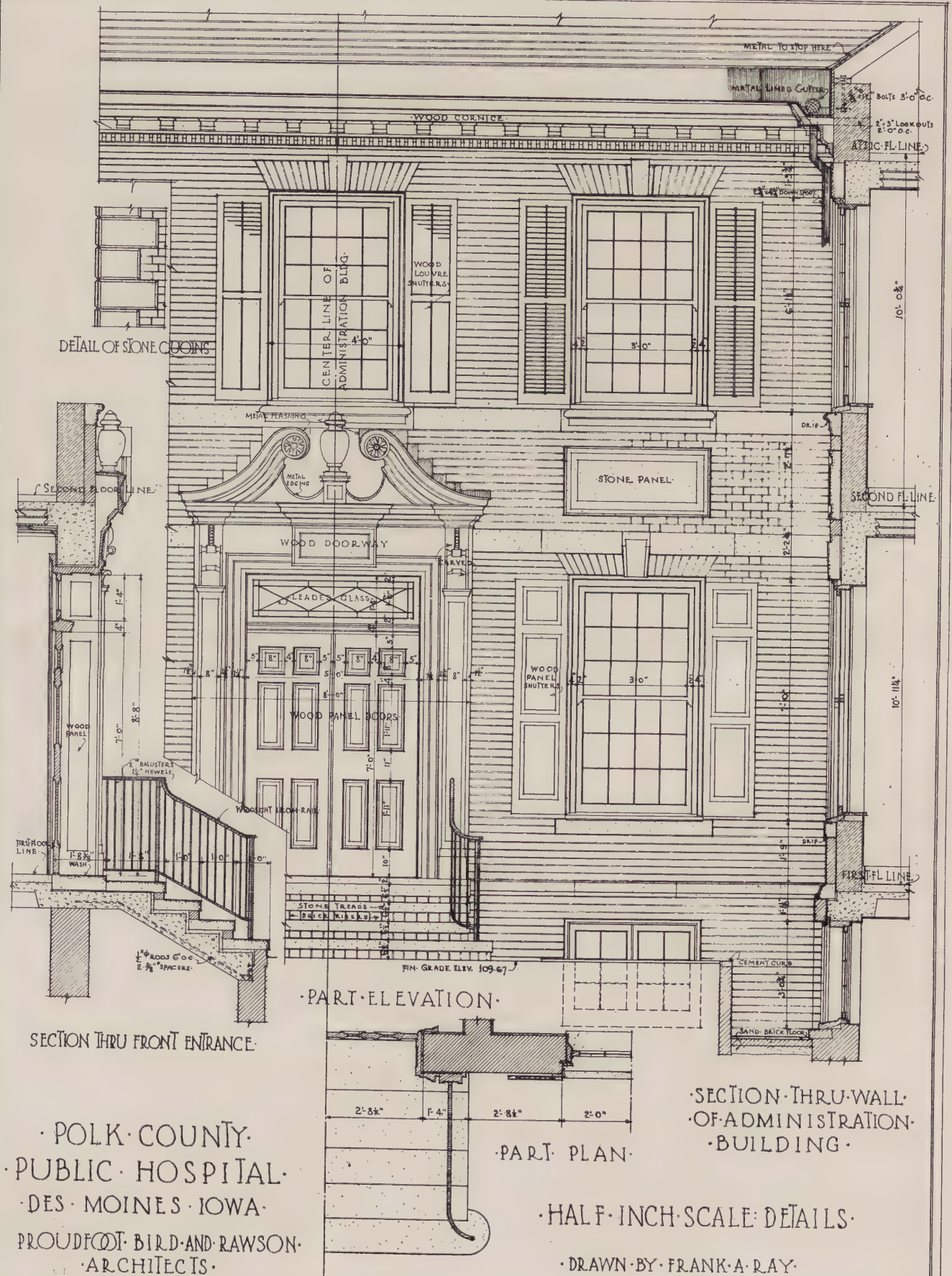
SECTION THRU TYPICAL SPANDREL
AT 8th FLOOR.

Details of Construction—Addition to The Shelburne Hotel, Atlantic City, N. J.
Warren & Wetmore, Architects, New York.



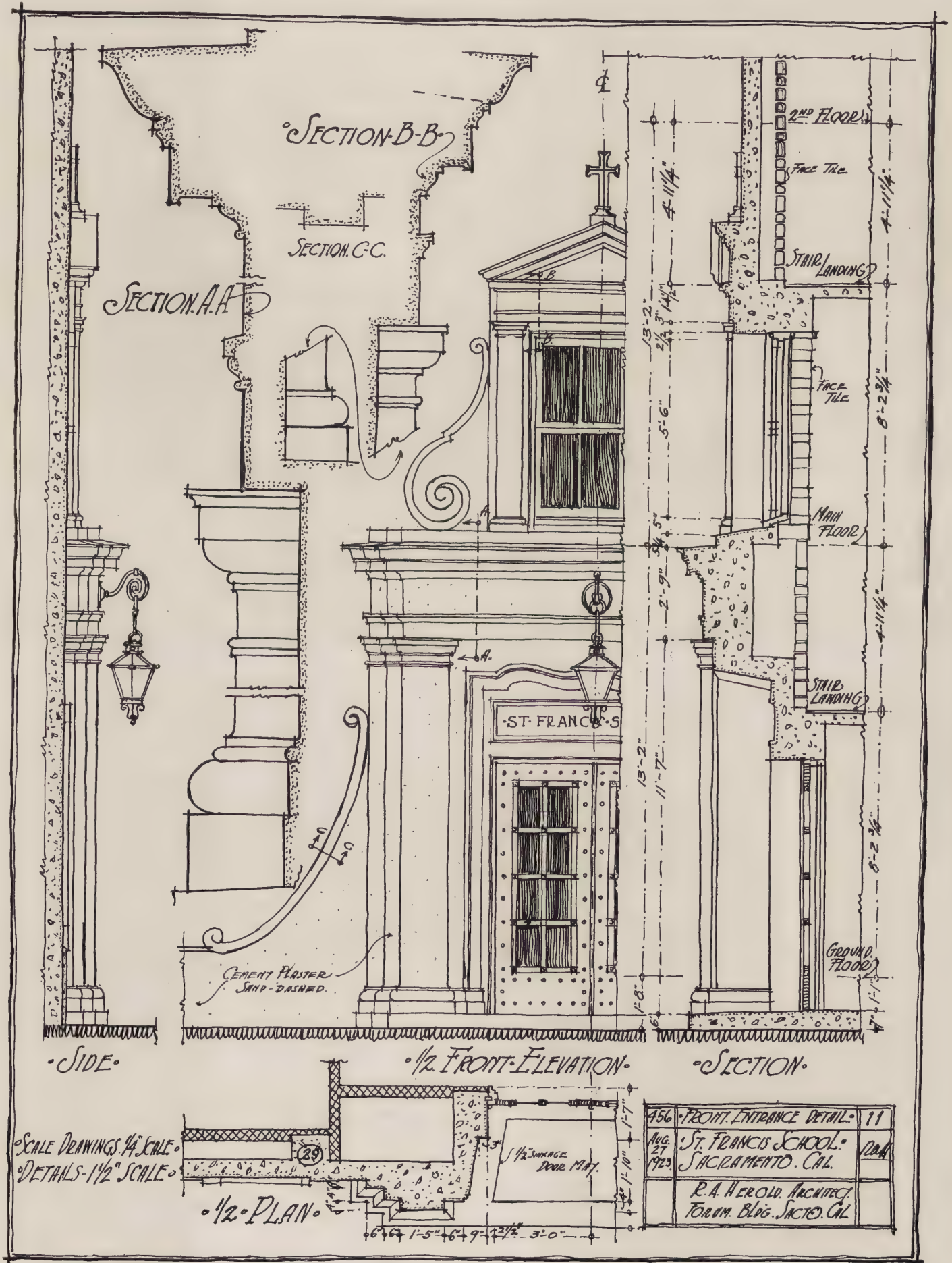
Details of Construction—Marquise. Geo. B. Post & Sons, New York, and Mauran Russell & Crowell, St. Louis, Associated Architects.

PENCIL POINTS



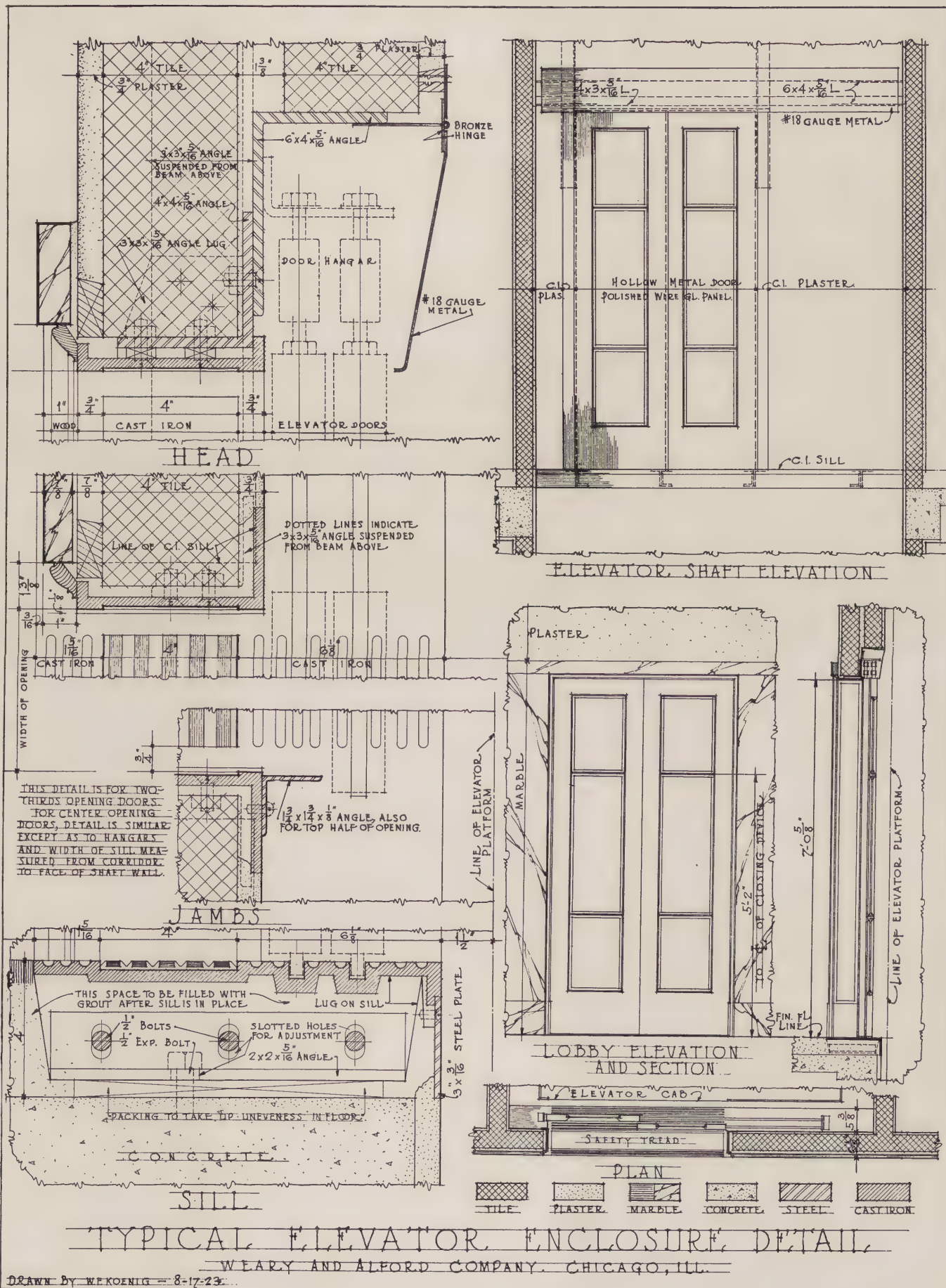
Details of Construction—Proudfoot, Bird & Rawson, Architects, Des Moines, Iowa.
Drawn by Frank A. Ray.

PENCIL POINTS



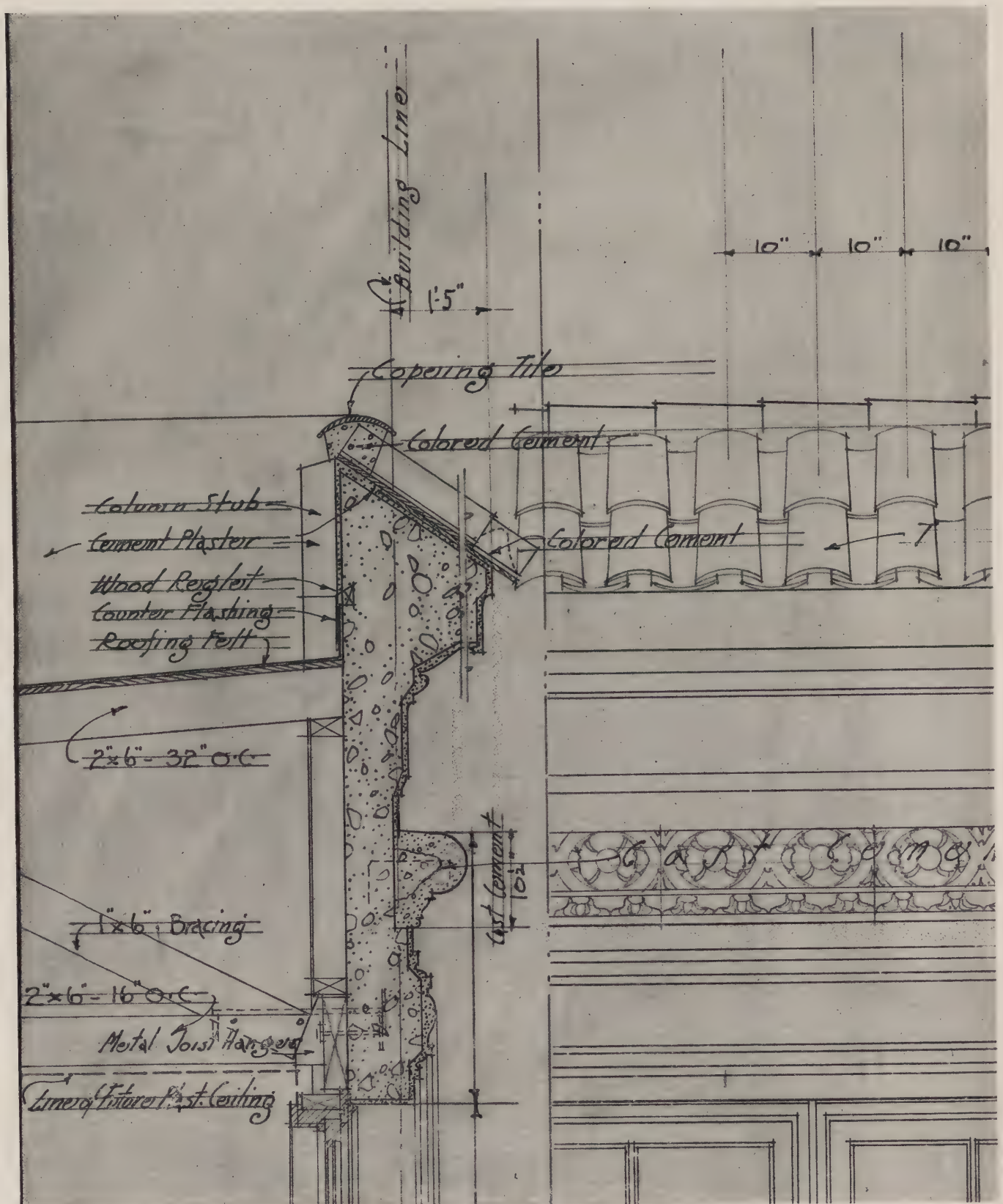
Details of Construction—St. Francis School. R. A. Herold, Architect, Sacramento, Cal.

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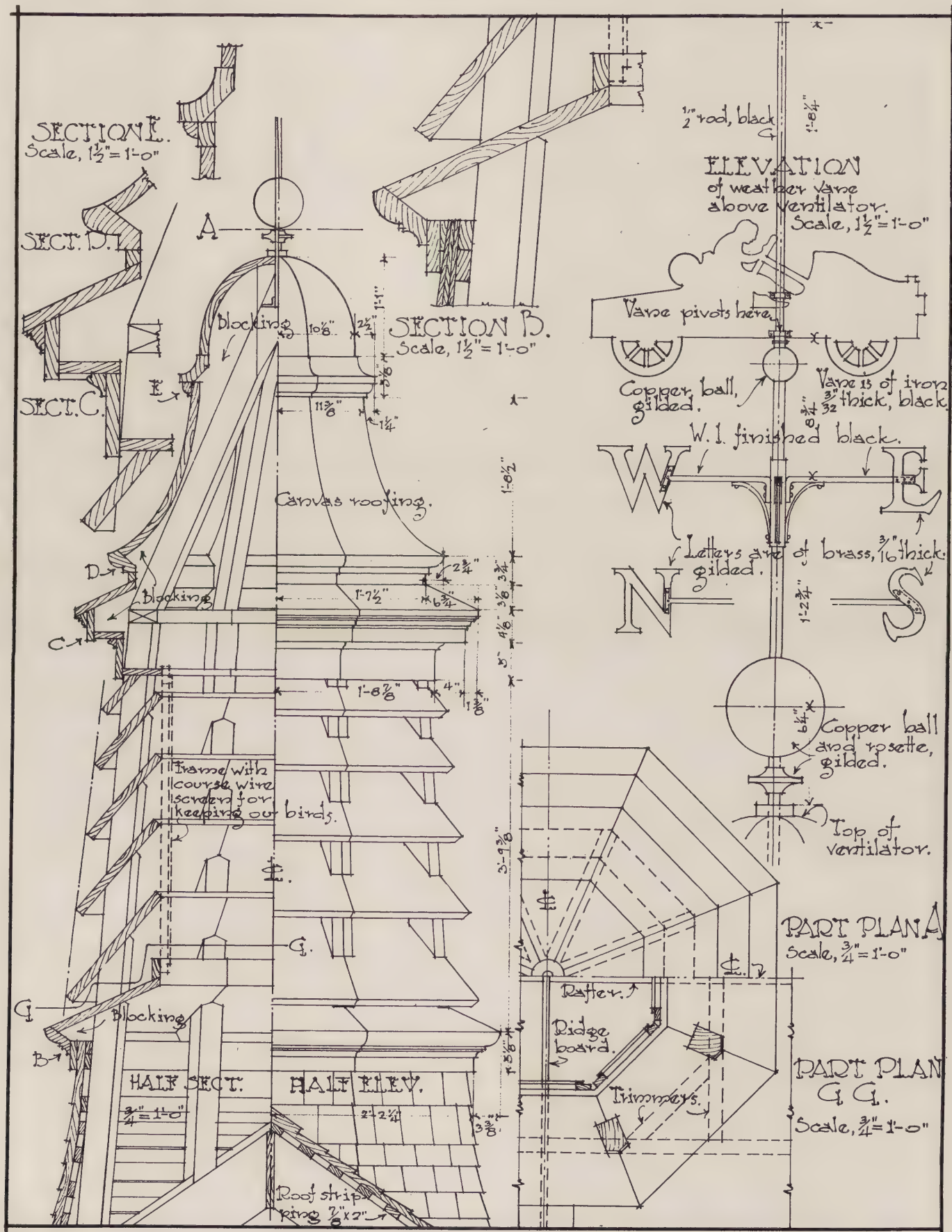
Details of Construction—Typical Elevator Enclosure. Weary & Alford Co., Architects, Chicago, Ill.
Drawn by W. F. Koenig.

PENCIL POINTS



Details of Construction—School Building.
Wm. C. Hays, Architect, Sacramento, Cal.

PENCIL POINTS

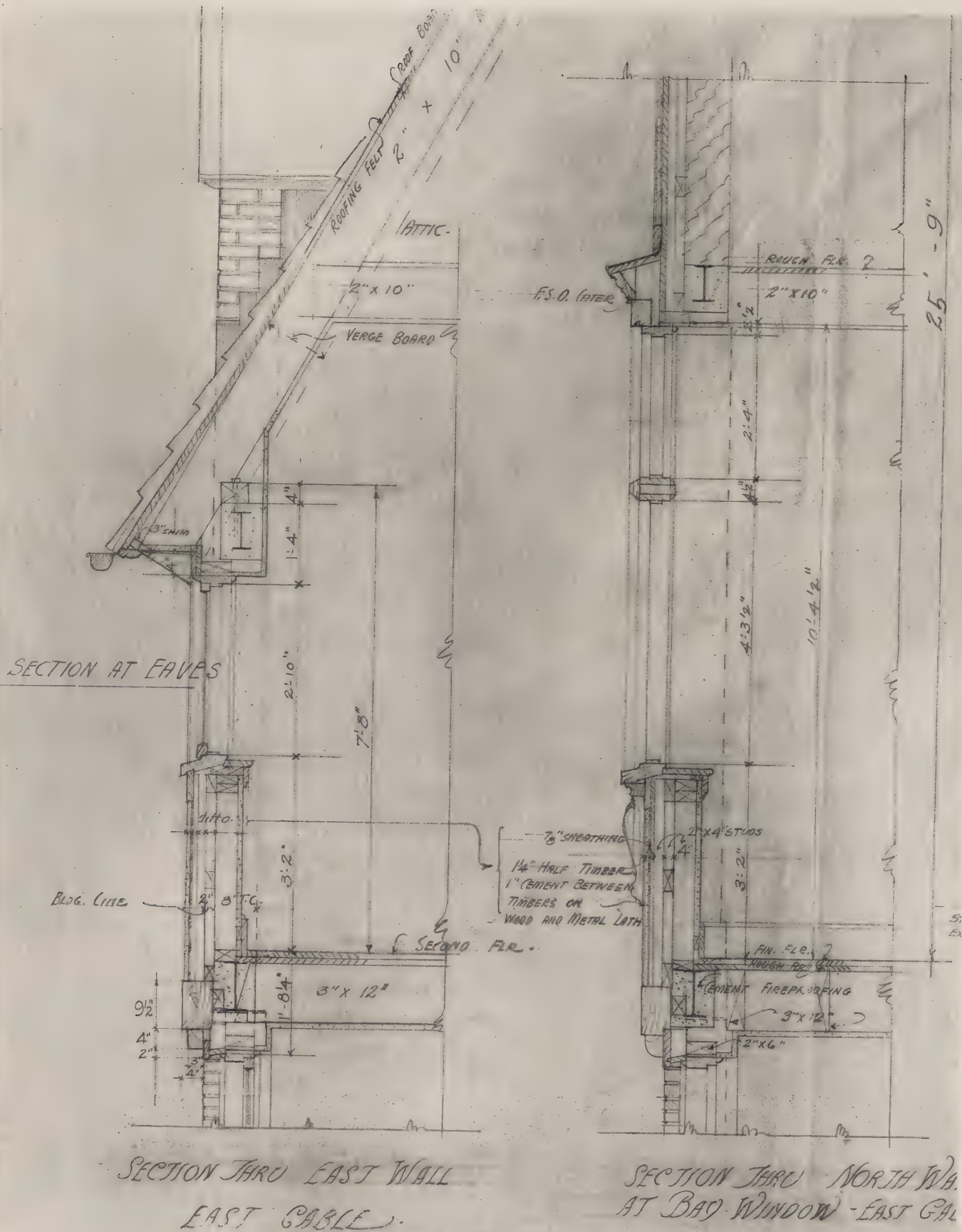


Details of Construction—Hay Loft Ventilator. Hewitt & Brown, Architects, Minneapolis, Minn.

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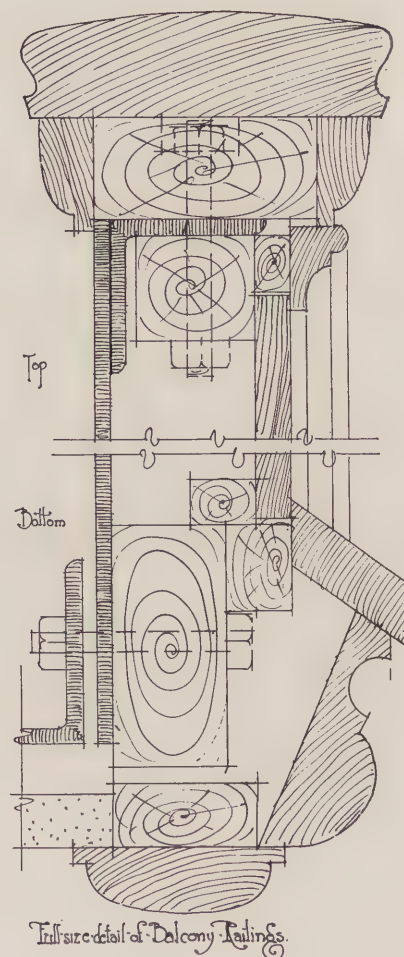
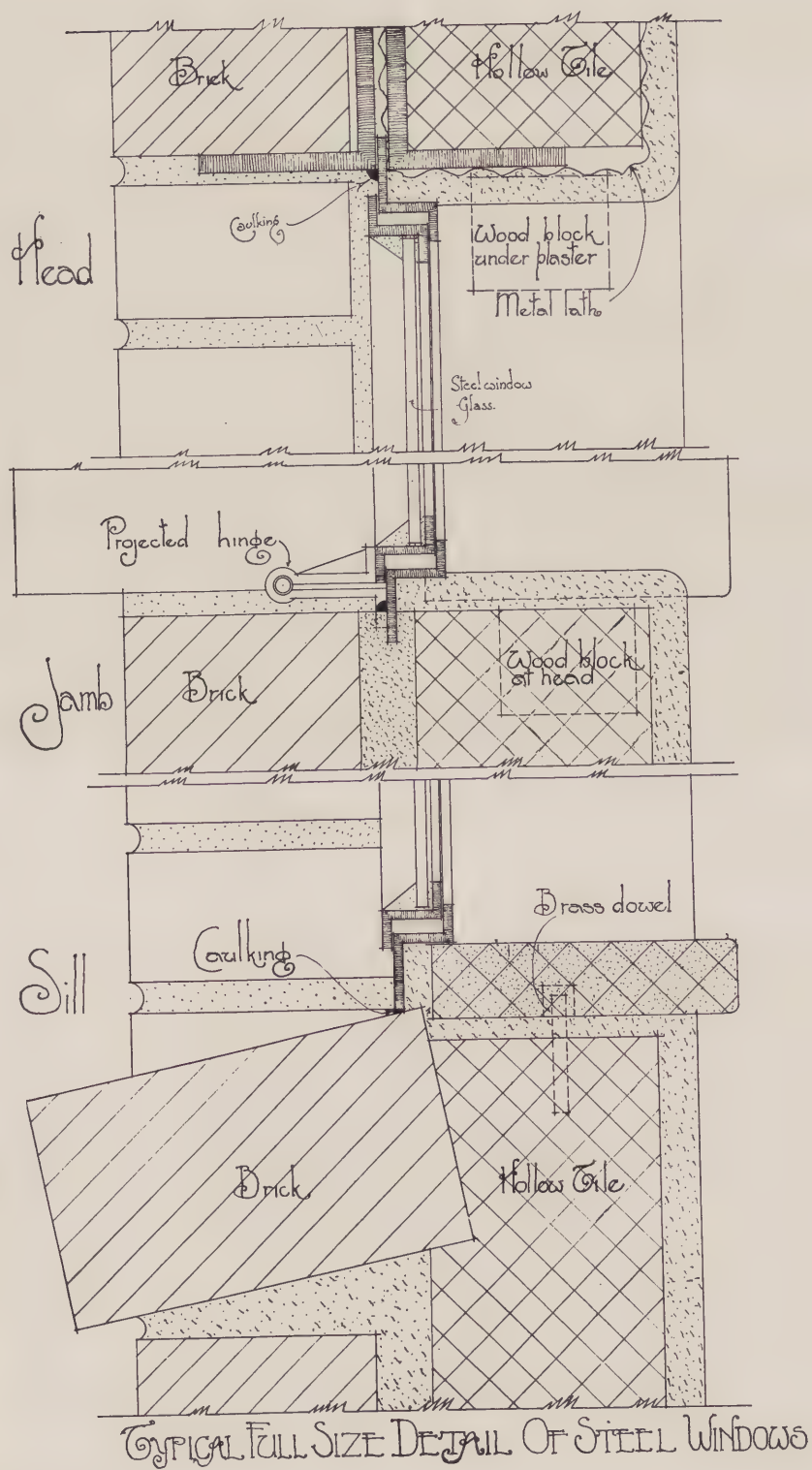
Details of Construction—Elevator Bucks of Apartment House.
J. E. R. Carpenter, Architect, New York.

PENCIL POINTS



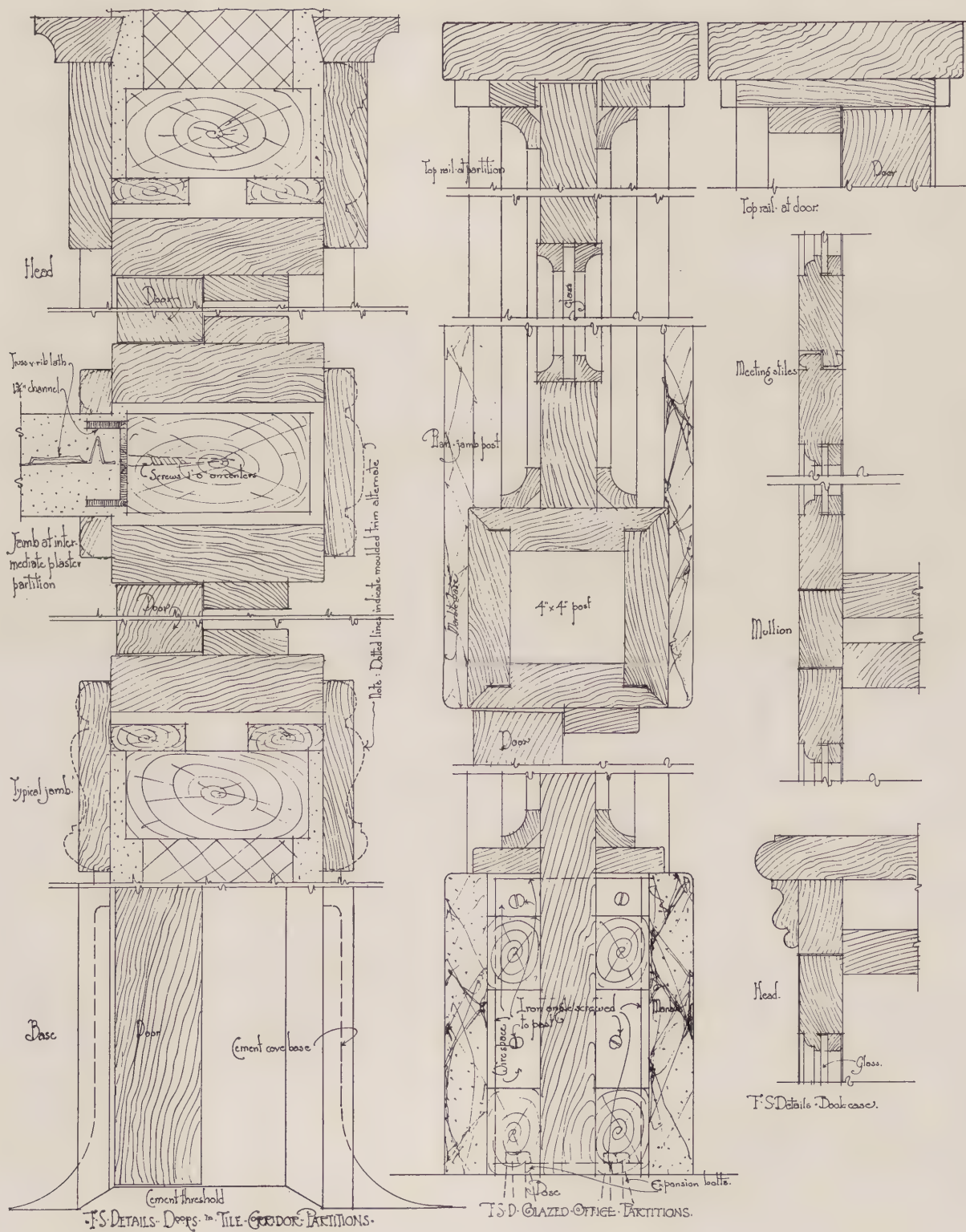
Details of Construction—Theatre for Bellevue Theatre Co., Upper Montclair, N. J.
J. H. Phillips, Architect, New York.

PENCIL POINTS



*Details of Construction—People's Institute Building for the Salvation Army, Inc.
Thomas Pringle, Architect, Pittsburgh, Pa.*

PENCIL POINTS

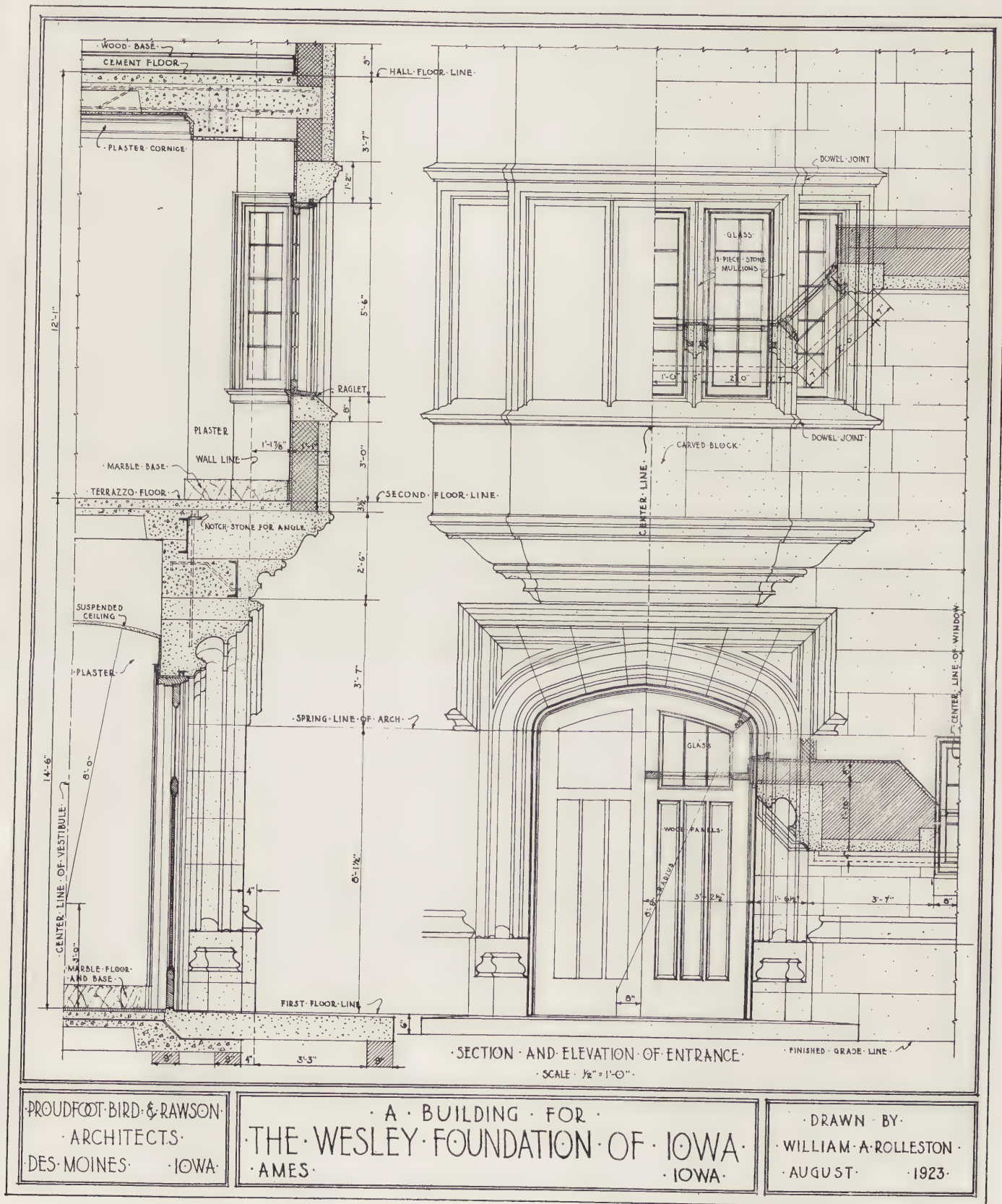


*Details of Construction—People's Institute Building for the Salvation Army, Inc.
Thomas Pringle, Architect, Pittsburgh, Pa.*

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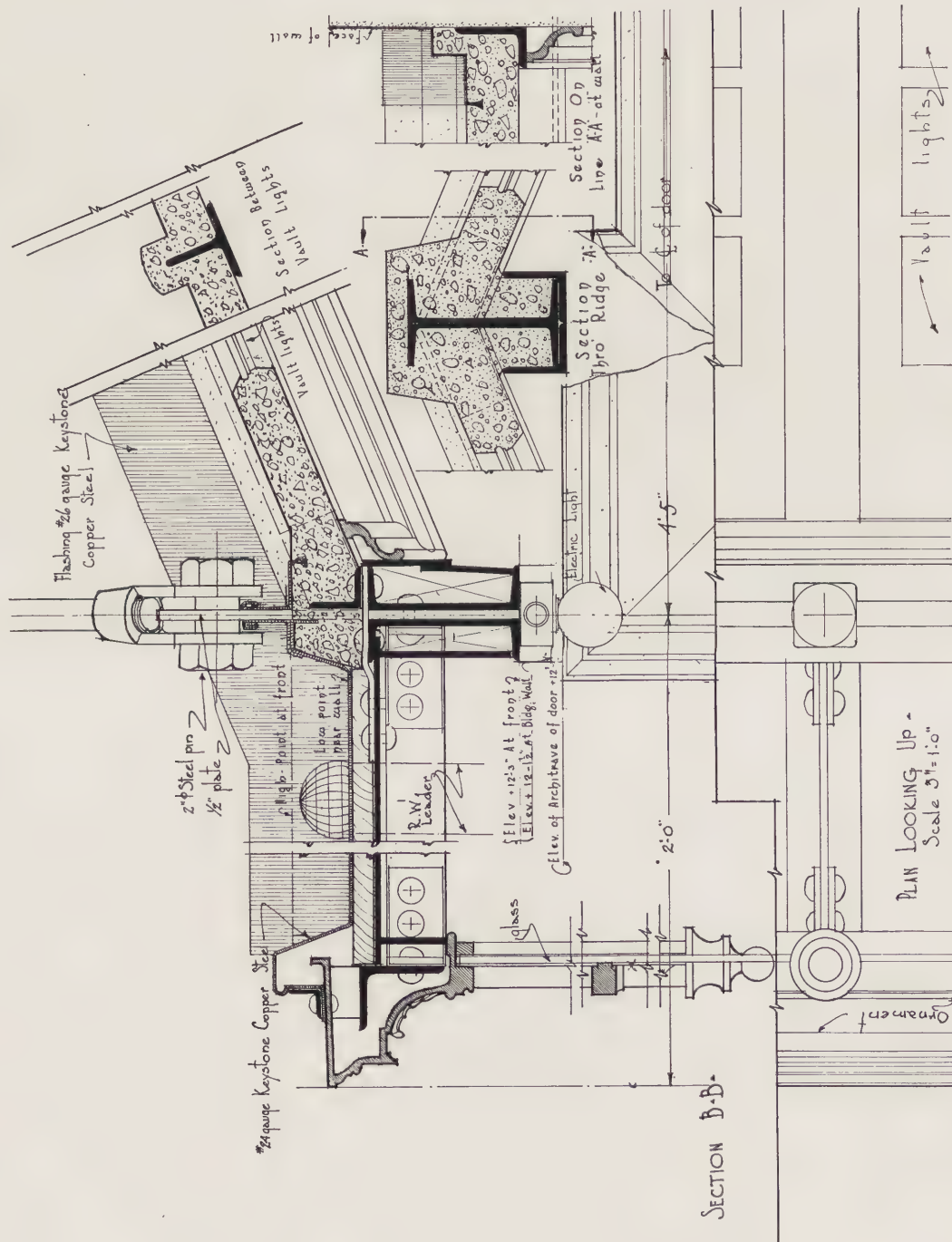
54

PENCIL POINTS



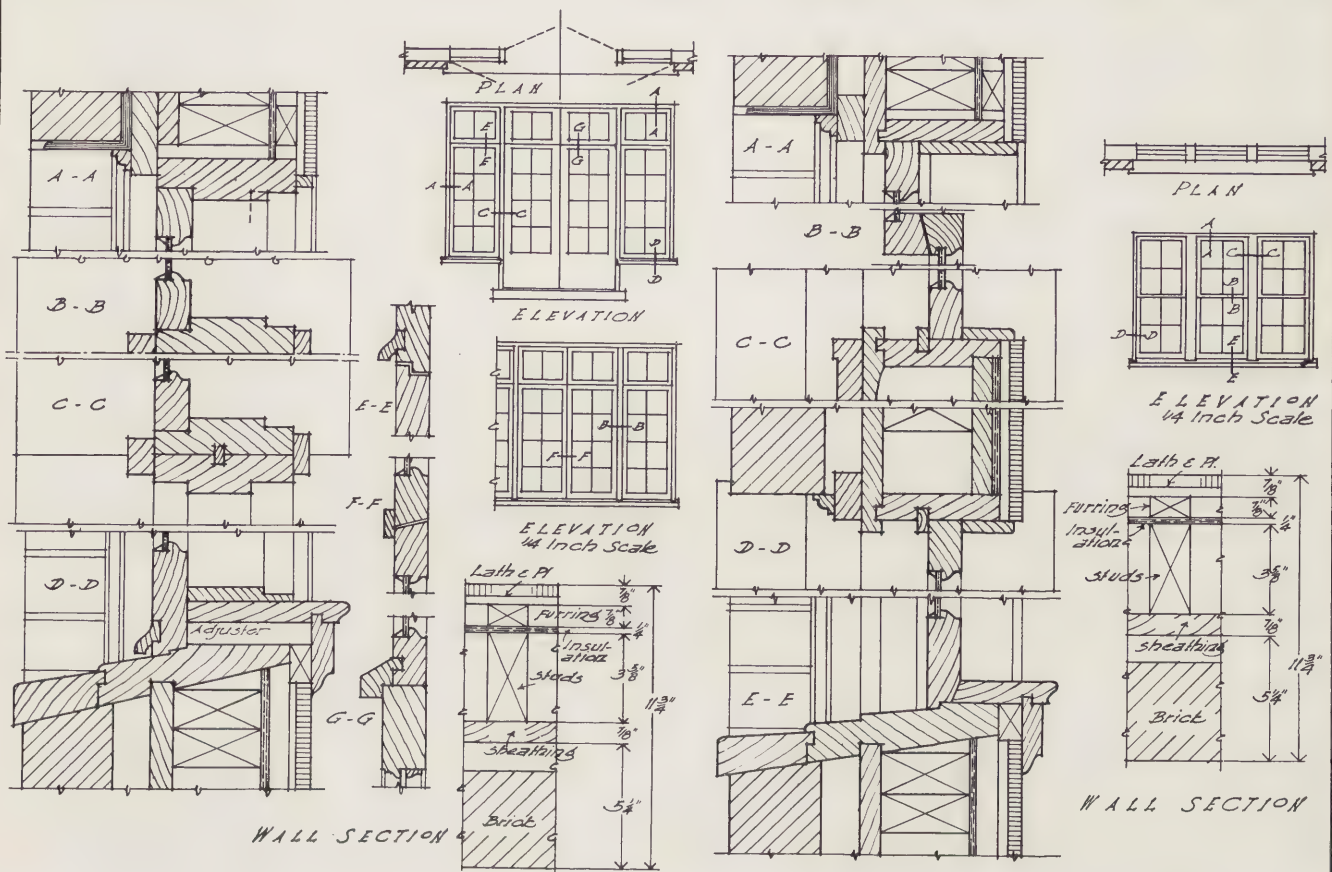
*Details of Construction—Proudfoot, Bird & Rawson, Architects, Des Moines, Iowa.
Drawn by William A. Rolleston.*

PENCIL POINTS



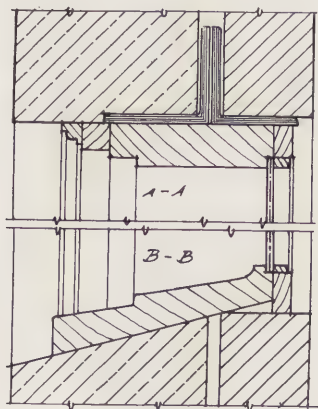
Details of Construction—Marquise for a Residential Hotel.
Geo. B. Post & Sons, Architects, New York City.

PENCIL POINTS



SINGLE SASH WINDOWS
3 inch Scale

SLIDING SASH WINDOWS
3 inch Scale

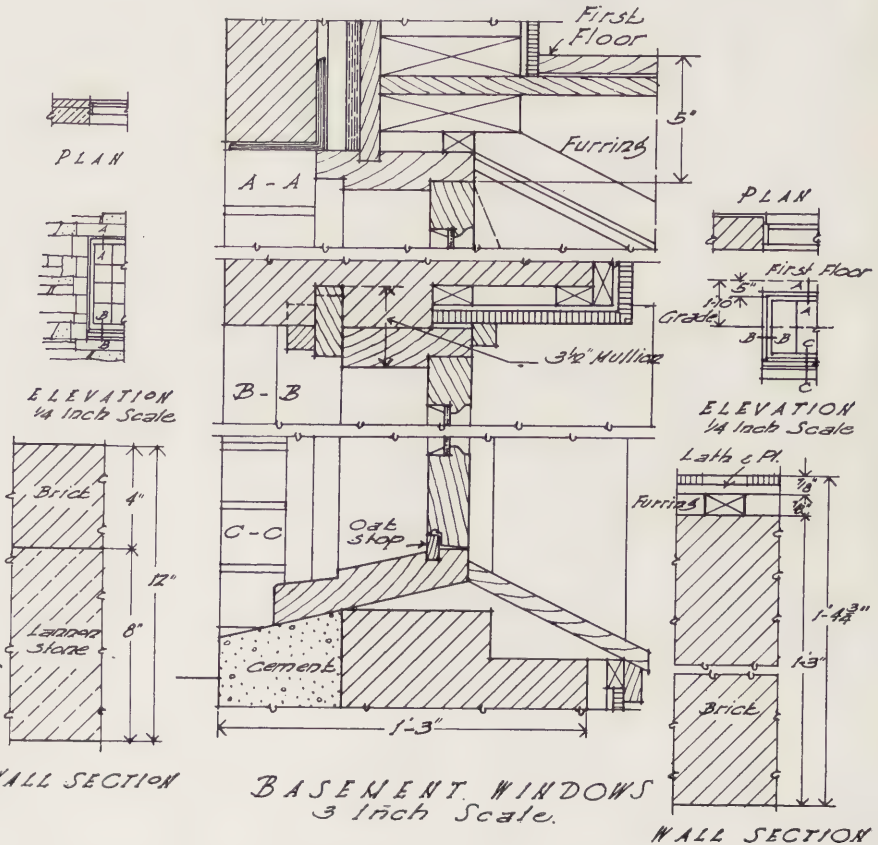


GARAGE WINDOWS
3 inch Scale

TYPICAL HOUSE - WINDOW FRAME DETAILS

BUENNING & GUTH
ARCHITECTS MILWAUKEE

Drawn by Anthony Wuchterl



BASEMENT WINDOWS
3 inch Scale

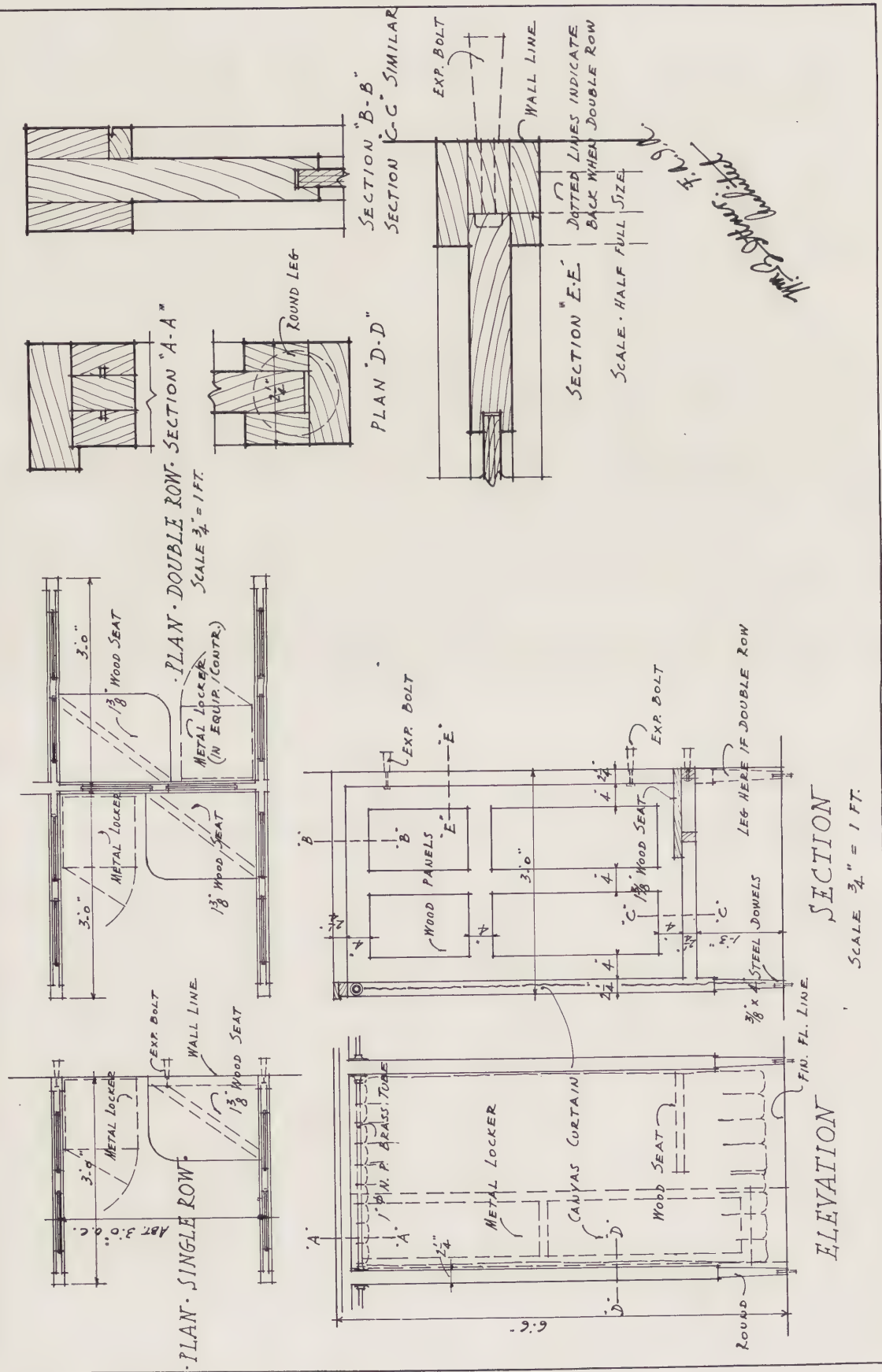
Details of Construction—Typical House Window Frame Details. Buemming & Guth, Architects.
Drawn by Anthony Wuchterl.

WM. B. ITTNER
ARCHITECT · ST. LOUIS, MO.

WOOD DRESSING BOOTHS

DATE
AUG. 4, 1923.

SHEET No.
D3



Details of Construction—Wood Dressing Booths. Wm. B. Ittner, Architect, St. Louis, Mo.

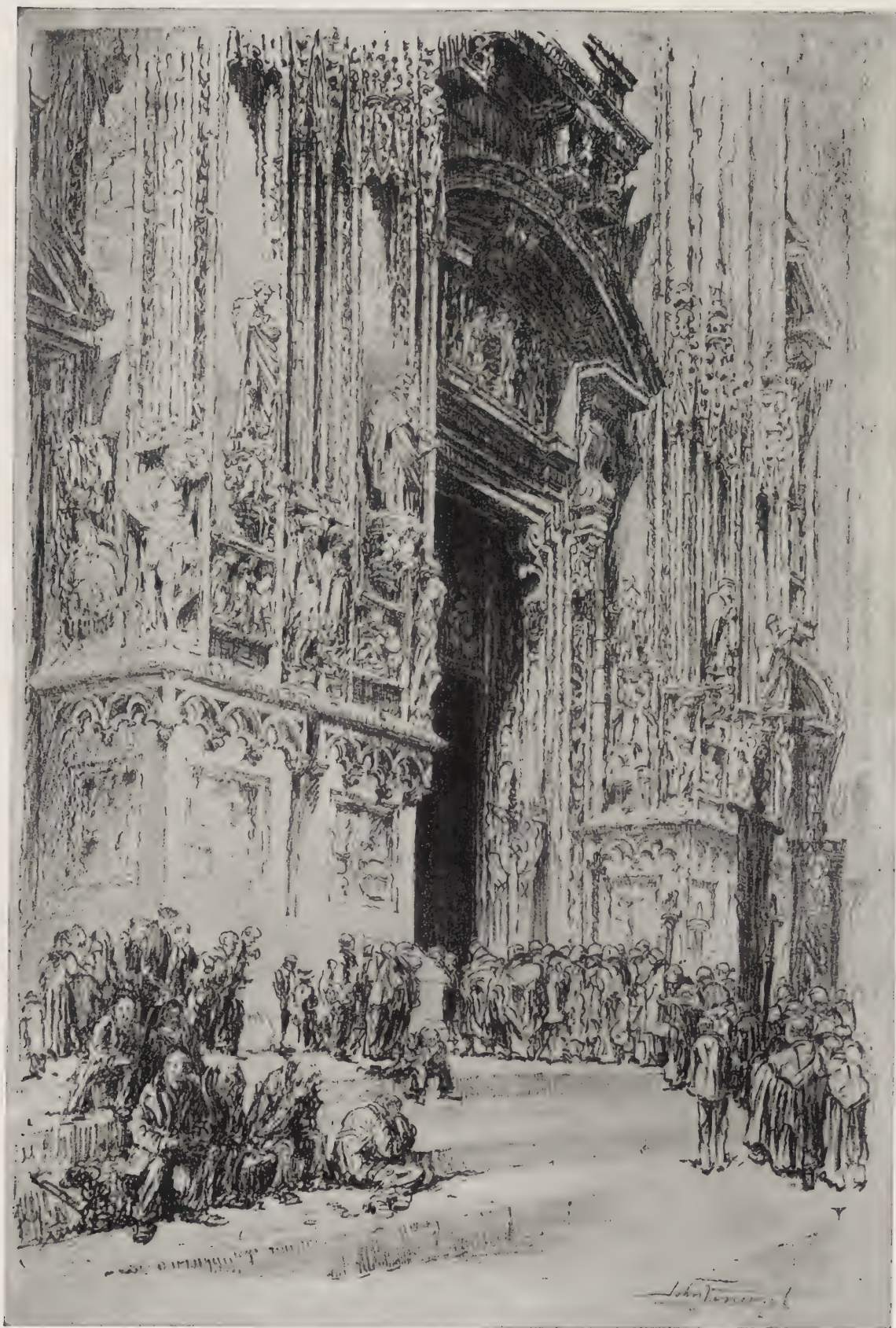


Courtesy of The American Hellenic Society.

ACROPOLIS OF ATHENS FROM THE WEST

Photographed by Frederick Boissonnas

On the other side of this sheet is reproduced a remarkably fine photograph by Frederick Boissonnas showing the acropolis at Athens in a most impressive and beautiful manner. This photograph is one of the many fine views of Greek architectural monuments included in an exhibition sent to this country under the auspices of the Greek government. The original photograph was loaned to the publishers of this journal for reproduction.



PORTAL OF THE CHURCH OF SAINT MERRI, PARIS
FROM A DRAWING ON STONE BY JOHN VINCENT

The lithograph reproduced on the other side of this sheet is one of the most interesting of the many studies of European architecture made by John Vincent, whose renderings of architectural works are well known to the profession.



Courtesy of Kennedy & Co.

ST. ETIENNE DU MONT FROM AN ETCHING BY CHARLES MERYON

One of the series of etchings which Charles Meryon made by way of preserving an artistic record of the rapidly disappearing picturesque bits of Old Paris is shown on the other side of this page. Meryon's etchings are highly esteemed by collectors.



Courtesy M. Knoedler & Co.

LIBERTY'S CLOCK, ETCHING BY MUIRHEAD BONE

A notable etching is the one reproduced on the other side of this page. Muirhead Bone is one of the most masterly etchers and he has made an extremely interesting picture in this case from a bit of a London street with a building under construction, a few typical London buildings and the clock from which the etching takes its name.

PENCIL POINTS

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AMERICAN ACADEMY IN ROME

FROM a letter recently received by Mr. C. Grant La Farge, Secretary of The American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following items of news:

"The second volume of the 'Papers and Monographs of the American Academy in Rome,' has just appeared; the book in question is Miss Lily Ross Taylor's 'Local Cults in Etruria'; number of pages, 258. It is a scholarly production, and should prove a credit to both Miss Taylor and the Academy.

"The collaborative article on the Basilica of Constantine, prepared by Miss Franklin of the Classical School and Mr. Hafner of the School of Fine Arts, needs but a few touches to make it, too, ready for the printer. The article deals with both the archaeological and architectural features of this most interesting monument.

"Miss Van Deman, a Former Fellow of the Classical School, and at present a Research Associate of the Carnegie Institute who has been with us all the year, has completed a preliminary report on the little known section of the Roman Forum, which lies between the Regia and the Arch of Titus. She has skilfully unraveled a mass of ruins. The results are soon to be published in the 'American Journal of Archaeology.'

"The Session of the first Summer School is now half over. Although there are but five pupils, Prof. Showerman reports that what is lacking in numbers is fully made up in quality, seriousness and enthusiasm. He has no regrets. He prepared an excellent program, and is carrying it out. He took his pupils to Horace's farm the other day, and lectured to them at the site. A student must be 'dead' indeed who cannot derive inspiration under such circumstances.

"The student body is now exceedingly well organized. The Massier, Mr. Hanson, has just presented me with a four-page typewritten report of their last meeting, in which all the motions are duly proposed, seconded and carried; and there is even a finished report from a sub-committee. Where changes are proposed, there is an accompanying constructive suggestion as to how the change may be effected. And, best of all, there is a splendid spirit of co-operation which runs all through the report.

"This is the season of repairs to the properties, and, as a consequence, the superintendent of Buildings and Grounds, Mr. Canziani, is an exceedingly busy man. I

fear there will be a good deal of painting next summer, and I will accordingly prepare an item for it, which will appear in the next budget. There has been no rain in Rome for the last three months, and the intense heat of the sun has injured the paint in many places.

"There have been two gifts during the month, Mr. A. S. Frissell, who came with a letter of introduction from Mr. Mead, presented the Academy with a check of \$100, to be expended at the discretion of the Director. The other gift came from an American dealer in antiques, by the name of Augusto Frank; he has given us a valuable porphyry slab for the fresco class, for fresco should be ground upon hard substances; the slab measures two feet by one foot six inches and is an inch and a half thick. This is an unusually large slab.

"The Stohberg Villa, which we should like to have as a hostel for women students if we had the funds, is to be privately sold within a few months by the Italian Government for the benefit of Italian subjects who lost property in enemies' countries during the war. Sig. Del Frate has filed a request with the Government, stating that the Academy would like to be considered a possible purchaser—the request does not bind us in any way to buy the villa, however.

"I was invited last Sunday to attend an exhibition of the work submitted for the Italian 'Prize of Rome' in painting and mural decoration. The King was there, and talked encouragingly to each competitor. Thus both France and Italy believe these competitions to be so important that the chief officers in these countries play an important rôle in the competitions. Do you not believe that the present financial condition of the Academy warrants our sending our men to Washington, so that the President may speak a word of encouragement to each man? If properly capitalized, it would certainly bring the Academy to the attention of the young men in America, which is a most important matter.

"Still another matter, which I hope to place in detail before the Board soon, is the possibility of the Alumni of the Academy establishing a prize in Italy, open only to Italians. The scheme has worked well in the Ecole des Beaux Arts at Paris, and should work well here. The artistic debt of America to Italy is great indeed, and I think the scheme would readily find supporters. The good will it would engender should greatly strengthen the position of the Academy in Italy.

"The Franks, the Lamonds, the Van Burens, Professors Curtis, Faulkner and Manship, and Mr. Davico, are away in various parts of Europe. Prof. Fairbanks, Prof. Showerman, Mr. Canziani, and I are now holding the fort in Rome. Prof. Lord, who is to be the Annual Professor in the Classical School next year, has just passed through Rome with a party of a hundred people, en route for Greece. Mr. Blashfield has also been here, to see how Mr. Lascari is progressing with the mosaic decoration of the church in Washington; the work is advancing exceedingly well. Mrs. Breck and Mrs. Crowninshield, wives of former Directors, happen to be in Rome at this time, and so is Miss Haight, a professor from Vassar—she is planning to use our library for the next month. Finally, Mr. C. P. Jennewein, a former Fellow in sculpture, is occupying a vacant studio for the next two months; he has already made a delightful group of a cupid and stork, to commemorate the birth of his third child in Rome a few weeks ago."

From a letter from Mr. Frank P. Fairbanks, Professor in Charge, School of Fine Arts, we quote the following:

"During the past month we have had nine of our Fine Arts Fellows in residence, which with the addition of the classical men and visiting students, has kept a fairly normal amount of activity among our men. We are fond of believing that during the summer there is some cessation of activities, academic and social, and to a great degree the men are free from the latter so that they are apt to work more progressively than usual, provided the weather conditions are not too trying. But the number of travellers that select the summer in which to see Europe

(Continued on page 69)



Rendering in Pencil and Water Color by L. C. Licht, Palisade, N. J.

PENCIL POINTS

(Continued from page 67)

keeps the Faculty pretty continuously occupied as cicerones about the Academy or as hosts for the more personally interested.

"This year a greater proportion of our official family have succumbed at one time or another to the rather trying and protracted heat and drought.

"J. K. Smith, senior architect, has been out of his studio for nearly ten days—and finds his work set back in consequence at a time when he had hoped to have finished and been away on his travels in the north. Mrs. Smith has kept almost continuously at work on his drawing and "full sizes" while he has been ill.

"Cecere, sculptor, has carried on his work notwithstanding a bad case of tonsillitis, a prevalent ailment in Rome. Ciampaglia, Senior Painter, is free from any local tribulations and well advanced on his second big decorative canvas. He has practically all his required work completed.

"The second year architect, sculptor and painter, Hafner, Amateis and Schwarz, are all busy and thriving. Hafner's model of the Dome of St. Peter's is well advanced and is expected to be delivered by the contractor to the Academy by September.

"Of the third year group, Marceau, architect, is traveling; Stevens, sculptor, is away for a few days while his figure is being laid up by an assistant; Floegel, painter, has completed a second copy of one of the muses by Lo Spagno in the Conservatore museum. He has also been busy with his first year composition and with a fresco panel on which he is experimenting.

"Ralph E. Griswold, Landscape Architect, with the aid of a Ford car that he picked up in Nice and will bequeath to J. K. Smith, has completed his travels in France, and gone over to England to study the important examples of gardening, many of which may not be kept up to their present standard because of new ownership and the predilection of some of these proprietors to change gardeners who have grown up with the estates.

"Prof. Lamond is at Canazei; Sowerby is about to join him; Randall Thompson, the first year composer, is in Clovelly, England. Howard Hanson is trying to complete the score for his "North and West" symphony that he may supply it in duplicate for production in London and New York next year.

"Chas. B. McGrew, Visiting Architect from the University of Illinois on a Plym Scholarship, has gone north to obtain further data on a collection of measured drawings of Italian doors for publication.

"Prof. Faulkner has completed his part of the Thrasher-Ward Memorial in a very able and successful manner. He is off for a well earned change and will return in the fall with Prof. Manship to help solve the color problem of material to be used in the sculptural development of the memorial.

"I had the great personal pleasure of showing the Academy to Dr. Dever S. Byard and his family on his visit to Rome. He had been urged to visit us by Mr. Trowbridge and Mr. Boring."

AWARD IN TRAVELLING SCHOLARSHIP OF THE ALABAMA MARBLE COMPANY

A JURY of Award consisting of Mr. R. Clipston Sturgis of Boston, Mr. Abram Garfield of Cleveland, Mr. Donn Barber and Mr. John V. Van Pelt of New York, have awarded a traveling scholarship of eighteen hundred dollars, established by the Alabama Marble Company for the purpose of studying the use of interior marbles in Europe, to the winner of the Competition for a small bank building—Mr. Frank Martinelli of New York City, whose portrait appears on this page. Mr. Philip Sanfilippo was placed second.

The competition was conducted under the guidance of the Educational Committee of the American Institute of Architects.



FRANK MARTINELLI

FRANK MARTINELLI, who has been awarded the travelling scholarship established by The Alabama Marble Company, was born in Avigliano, Italy, in 1899. Mr. Martinelli's family have been builders for generations and at an early age he took up the work outside of school hours.

When Mr. Martinelli came to this country in 1913 he took up carpentry. In 1916 he entered the class in Architectural Construction at Cooper Union. He gives much credit to his instructor, Mr. John C. McGowan.

In 1918 he secured a position with Hoggson Brothers, as office boy. Five months later he entered the office of Mr. Philip J. Rocker, New York, where he made rapid progress as a draftsman, which he attributes to the interest Mr. Rocker took in his development. In 1920 Mr. Martinelli entered the office of York & Sawyer. In 1921 he made a trip abroad, visiting Italy, France, England and Spain and returned to New York a year later. Shortly after his return from abroad Mr. Martinelli entered the office of Mr. H. T. Lindeberg as a designer.

Mr. Martinelli became an American citizen in 1921. He studied the problems of the Beaux-Arts Institute of Design in the Atelier Corbett and has entered many competitions during the past few years.

THE TECHNOLOGY CLUB, SYRACUSE, N. Y.

HOW successful the affiliation movement has been is shown by the fact that the Technology Club of Syracuse, Inc., is preparing to double its winter's program. In addition to the regular Monday evening lectures it is planned to conduct every Friday evening in the Club rooms "An Hour with Syracuse Industries." The great diversity of local industry, the Club managers feel, will enable them to give a program of unusual excellence and interest.

Upon invitation of the Rochester Engineering Society President Wilbur Miller will outline to that organization on Friday, September 14, the affiliation plan which was inaugurated by the Technology Club and has proven so successful.



Pencil Study by C. D. Maginnis.

PENCIL POINTS



ISIDOR RICHMOND

ISIDOR RICHMOND, winner of the Rotch Travelling Scholarship in Architecture, sailed August 18 on the S. S. "Orbita" from New York for Southampton, England. Mr. Richmond plans to spend two years in travel, studying the masterpieces of architecture in England, France, Italy, Spain, Belgium and Greece.

Mr. Richmond's home is at Beachmont, Mass. He attended grammar school and high school at Revere, Mass., and at the age of sixteen entered the office of Cram & Ferguson, and, while employed there, studied in the night classes of the Boston Architectural Club.

He was inspired and encouraged by the counsel of Mr. Ralph Adams Cram and under his advice, entered the Massachusetts Institute of Technology, where he later studied under Mr. Cram.

He enlisted in the Navy in June, 1917, held grade of 2nd Class Seaman, 2nd Class Yeoman, 1st Class Yeoman. Was transferred to Naval Aviation, sent to Ground School at M. I. T., then to Pensacola, Fla., where he was taught to fly. He was commissioned Ensign and sent to Air Station at Chatham, Mass., for Coast Patrol duty. He was raised to the rank of Lieutenant, Junior Grade. He was discharged from service April, 1919.

In the summer of 1920 he went to France with the Harvard Construction Unit. His work in this connection is covered by the following quotation from the Harvard Alumni Bulletin:

"The most interesting architectural work carried out by the Unit was that of Isidor Richmond, M. I. T., '16, and Myron R. Dasset, Columbia, '18, who made detailed studies and measured drawings of the Eglise St. Jacques, from which the restoration of the church will be carried out. Their studies were directed by M. Deneu, the foremost living authority on Gothic and Renaissance architecture, who has entire charge of the restoration of the Cathedral. During his conferences he frequently branched off into informal lectures on architectural points brought up by the latest excavations in the Cathedral. As his office, where Richmond and Dasset worked, looked out on the nave, they had an additional inspiration for earnest work."

The Rotch Travelling Scholarship was founded in 1883 by the children of the late Benjamin S. Rotch, of Boston, in pursuance of their father's intention of establishing such a prize during his lifetime. The Trustees of the fund have given the general direction of the affairs of the Scholarship to the care of the Boston Society of Architects, the general management being in the hands of a special committee. The successful candidate in each yearly examination receives from the Trustees of the Scholarship the sum of two thousand dollars, to be expended in foreign travel and study during two years, under the regulations of the committee.

ADDRESSES WANTED

WE SHALL appreciate it if those whose names appear in the following list will send correct address to us.—PENCIL POINTS: Natt A. Piper, Long Beach, Cal.; Samuel W. Finley, Los Angeles; J. D. Johnson, Los Angeles; Edward Lamel, Los Angeles; H. L. McNabb, Los Angeles; Ernest E. Hunt, Ocean Park; Jack L. Williams, Pasadena; Ramon La Tourette, San Francisco; Lorren & Bradford, San Francisco; James H. Pearce, San Francisco; Wilbur J. McElroy, Norfolk, Conn.; T. S. McClelland, Washington, D. C.; Andrew F. McDonald, Washington, D. C.; Wm. G. Ward, Washington, D. C.; Thos. H. Brown, Atlanta, Ga.; W. L. Felch, Atlanta; Robt. Isenbarger, Champaign, Ill.; W. Moir, Chicago; Trent E. Sanford, Chicago; F. P. Uphues, Chicago; Elihu Jones, Chicago Heights; Paul N. Duca, Urbana, Ill.; Peter Du Pay, So. Bend, Ind.; E. D. Van Frank, Indianapolis; O. W. Schomburg, South Bend; Fred A. Morgan, Ames, Iowa; Alvin R. Firester, Salina, Kan.; Herbert Levy, New Orleans, La.; C. E. Downs, Boston, Mass.; Ralph W. Hammett, Cambridge, Mass.; F. S. Hayes, Cambridge; S. R. McCandless, Cambridge; Geo. L. Paine, Jr., Cambridge; Carl M. Stiles, Cambridge; Sen Yu, Cambridge; Catherine B. Heller, Ann Arbor, Mich.; Leslie Van Doren, Ann Arbor; Albert J. Lathian, Detroit; Harry T. Morgan, Port Huron; Paul C. Dathe, Minneapolis, Minn.; Mark Nelson, Minneapolis; Robert Crevier, St. Louis, Mo.; Vincent J. Kelly, St. Louis; P. P. Lewis, Omaha, Neb.; H. Tyson Hamel, Atlantic City, N. J.; H. M. Gerns, Woodridge; J. F. Butler, Ithaca, N. Y.; Walter Briant, New York City; Faustino B. Urbano, New York City; Henry A. Martin, Syracuse; H. Artan, High Point, N. C.; J. J. Davis, Raleigh, N. C.; Chas. F. Cellarius, Cincinnati, Ohio; Fred B. Klein, Cincinnati; R. C. Nowling, Cincinnati; Wm. D. Guion, Cleveland; Prof. J. N. Bradford, Columbus; Gilbert P. Schafer, Columbus; R. M. Morgan, Stillwater, Okla.; J. W. Schmidt, Tulsa; John Bogdan, Philadelphia, Pa.; Thomas J. Earley, Philadelphia; Albert V. Greene, Philadelphia; Chas. Shippman, Philadelphia; L. P. Thomas, Philadelphia; N. D. Kutchukian, Pittsburgh; Clarence Lundquist, Pittsburgh; Frank A. Stevens, Pittsburgh; L. H. Pearce, Ridley Park; Wm. Thompson, Dallas, Texas; Homer B. Mathes, Pullman, Wash.; W. D. Becket, Seattle; Lester H. Landaal, Seattle; P. C. Underwood, Seattle; Florence E. George, Milwaukee, Wis.; Juan Acevedo, Mayaguez, P. R.

EVENING COURSES IN ARCHITECTURE

EVENING courses in architecture will be given by Washington University and the St. Louis Architectural Club, beginning October 5. The courses offered include: Architectural Drawing, History of Architecture, Descriptive Geometry, Shades and Shadows, Perspective Freehand Drawing, and Construction. A life class will be held on Monday evenings. The work is under the direction of Professor G. Ferrand of Washington University and F. Ray Leimkuehler, Chairman of the Atelier Committee of the St. Louis Architectural Club.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION, PART XII.

BY OTTO GAERTNER

In this series of notes Mr. Otto Gaertner, A. I. A., Associate Member American Society of Civil Engineers, is treating of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Garages (Continued)—In a sales station garage, where all cars are of the same size, the diameter of the ramp may be such as to accommodate the turning radius of that particular make of car, which may even be less than fifty feet. In a large building where two ramps are required, if they are made circular, one may be placed within the other.

The width of the ramp depends upon the size of the cars that use it, the sharpness of angles, and the particular combination of ramp curve and slope that has been used, since upon the combination depends the ease with which the car can be guided along the ramp. In general, the width should be at least eight or nine feet between curbs. While some cars can be accommodated in narrower spaces, it must be remembered that even on a straight road, cars are bound to weave in and out across the road.

The ramp should be provided with curbs from nine to twelve inches wide and ten inches high. It is well to make the outside curb wider to prevent the cars from getting close enough to the wall to damage the fenders; the inside curb being made only nine inches wide. The curbs should have the upper edges rounded off, and, if necessary, protected against wear.

The slope of the ramp depends upon the conditions involved in the construction of the building and upon the amount of space available. While a slighter incline is preferable, the incline is usually made about fifteen to twenty per cent. for space economy, if conditions permit. Outdoors one frequently travels over hills having such a grade, the average passenger car in good condition climbing them in second gear, while trucks take them more slowly. Downward travel on the ramps can be in first or second gear so as not to rely on the brakes to hold the cars in control. The brakes of any car should, however, be so capable and should be kept in such condition that they will easily hold the car on a twenty per cent. grade.

The ramp problem must be studied with great care from many different angles in each particular case. It must be solved so as to accommodate the amount of traffic and the kind of traffic required of it. It must economize on space so as to cause the least loss of car storage revenue and it must be arranged so as not to be dangerous to traffic or people employed in the building due to accident or collision. Often fewer ramps are needed for the upper stories than for the lower ones where the traffic is more congested.

To sum up, in comparison with the elevator system in the average building, the ramp accommodates more travel, thus saving time and lessening labor expenses; and eliminates delays due to the temporary absence of the elevator operator, the closing down of the elevator service for repairs, electric power bills, and the irritating wait for the elevator to become disengaged.

Sometimes where there is a large amount of travel in one direction and little in another, a combined ramp and elevator system may be used, the ramp taking the heavier traffic. In such a case, the elevator or elevators may be placed adjacent to the ramp if it is straight and within the curve of the ramp if it is curved.

If elevators are to be used, their number must be determined by a careful study of the conditions involved. It depends upon the kind of traffic to be served, the height and capacity of the building, and upon the capacity, speed, and type of elevator that is selected. Inquiries among garage owners as to the conditions and equipment in their buildings is the best guide. From one point of view, one elevator will usually take care of about one hundred to one hundred and thirty cars and the number of elevators should be increased in about the same proportion. It must be remembered that elevator service is used to its best advantage when it can carry one motor vehicle up and on its return trip carry one down.

This is all very well and can be done in the average commercial garage, but less so in a service station, and generally not at all in a truck storage garage because in the latter there is mostly one way traffic as has been previously mentioned. Where one way traffic must be contended with, the number of elevators depends upon the amount of traffic and, as has been mentioned in the comparison of elevators versus ramps, there is always the need of two elevators, one to be used when the other breaks down or is out of commission. This feature must not be overlooked in the commercial garage where contracts for storing cars usually state the amount of damage to be paid by the garage owner to the owner of the automobile when the car cannot be taken out of the building and used on account of lack of elevator service or other cause not the fault of the owner.

Elevators are perhaps best placed directly at the sidewalk, just inside the building, in which case they must necessarily have rear exits. They can also serve as entrances to the ground floor where they are standing at the ground floor level and have their gates open or raised as the case may be. If there is more than one elevator, they need not be grouped together, but may be spread out along the frontage of the building. The wall spaces over the elevator entrances need not be blank surfaces. They may have windows to match those on the remainder of the facade, but any such windows must be protected by bars or screens and plainly marked "shaft" on the outside. This must be done so as in case of fire to prevent the firemen from entering off a ladder from the outside and stepping into the shaft instead of on a solid floor.

This feature in the design brings to mind the question of treating the facade when staggered floors are used. One way would be to divide the elevation into a number of bays of window spaces separated by masonry piers. By designing these window spaces to have them count from top to bottom a solid portion can easily be introduced at each floor level. This means that the solid portions in certain adjoining bays will be staggered with each other, but by proper study the design may be developed so that certain transom or other bars will carry through horizontally with the lines of the solid portions in the adjoining bays.

However, to go back to the elevators, there are the questions of capacity, both as to load and size, and also the questions of speed and type. There is no fixed rule for any of these any more than there is for the number of elevators to be installed. Passenger elevators are usually figured at a live load of seventy-five pounds to the square foot but the freight elevators must be designed to carry the loads to be contended with in each specific building. For instance in one building the load may always be uniform and never more than twenty-five hundred pounds, because the business in that building, which may be an automobile manufacturing, distributing or sales business, is devoted only to a certain type of vehicle, say small pleasure cars.

(To Be Continued)

STANDARD SPECIFICATION

for the

Manufacture, Furnishing and Setting of Terra Cotta

Adopted by NATIONAL TERRA COTTA SOCIETY
19 West 44th Street, New York City

We desire to express our appreciation for the valuable assistance rendered by representatives of the Structural Service Committee of the American Institute of Architects, and of the National Bureau of Standards, Washington, D. C., in the preparation of this, the Standard Specification for Terra Cotta.

Note:—The Architect or Specification Writer will find it convenient to follow the Short Form Specification beginning with Section 63.

The Short Form incorporates all the provisions of the Standard Terra Cotta Specification, but eliminates the necessity of mentioning them in detail.

Reference to the Glossary, Sections 50-62, will supply the surface finish, ceramic finish, and color data necessary to specify surface and color correctly.

The Corollary Clauses, Sections 85, 86, explain the setting option between mason and manufacturer.

Sections 87-91 under Corollary Clauses explain the specifications for flashing, sheet metal, structural steel, structural concrete and rough carpentry. These specifications form a part of the Terra Cotta Specification, although the materials are supplied and set in place by different contracting parties.

A.—GENERAL INFORMATION

DRAWINGS AND SCHEDULES

1. The Terra Cotta manufacturer shall be furnished with all drawings, details and other information necessary for the manufacture of Terra Cotta, including drawings for all classes of work with which the Terra Cotta engages.

2. Wherever Terra Cotta is required to match in contour, color, finish and surface treatment, existing Terra Cotta, as for example in connection with alterations or additions to existing work, the Terra Cotta manufacturer shall be furnished with the required profiles and samples of the original work, and other needed information.

3. The Terra Cotta manufacturer shall before proceeding with manufacture, submit to the architect for his correction and approval, shop drawings showing jointing and construction of the Terra Cotta and provision made for all flashing and counter flashing. These drawings must conform as nearly as practicable to the architect's drawings, but shall be in accordance with good Terra Cotta structural practice.

4. All pieces of Terra Cotta shall be numbered. The Terra Cotta manufacturer shall provide two copies of the completed scale shop drawings to be used for setting and showing the piece numbering of the Terra Cotta, and the size of the joints to be used for setting the various portions of the work clearly indicated. These drawings shall be designated as the setting drawings.

5. The Terra Cotta manufacturer shall furnish, as promptly as possible, a schedule of all special anchors, hangers, etc., necessary to secure and support the Terra Cotta in a manner approved by the architect.

B.—MATERIAL

QUALITY. TESTS.

6. Note. In view of the researches now being conducted by the National Bureau of Standards at the instance of the National Terra Cotta Society, it seems inadvisable to attempt, at this time, to write either quality clauses in terms of crushing strengths, densities and elasticity, or specifications for tests. Clauses descriptive of the desirable physical characteristics and of tests to prove compliance of the material with such physical requirements will be prepared as soon as the necessary data are available and inserted in a later edition of this standard specification.

MODELING

7. All ornament shall be artistically modeled by the Terra Cotta manufacturer's staff artists. (Or, models

made to Terra Cotta shrinkage scale will be furnished to Terra Cotta manufacturer, without cost to him, securely crated for shipment f. o. b. modellers' studio at).

8. Photographs in duplicate of all ornament shall be submitted to the architect for his approval or correction, or, if he so desires, he may inspect all modeling at the factory. Such approval or inspection by the architect shall be made promptly. No ornamental work shall be burned until modeling has been approved.

SURFACE FINISH, CERAMIC FINISH AND COLOR

9. The surface finish, ceramic finish and color of all exposed surfaces of Terra Cotta shall be as indicated by the architect's drawings or as specified. For surface and ceramic treatments, see Glossary of Terms relating to Terra Cotta, which is hereby made a part of this specification.

10. The ceramic finish shall be applied to the Terra Cotta in such a manner as thoroughly to coat the exposed surfaces.

SAMPLES

11. The Terra Cotta manufacturer shall submit samples of the color or colors of the ceramic finish to the architect for his approval, and all Terra Cotta shall conform without marked variation to the sample or samples so approved.

C.—DESIGN AND STRUCTURE

ENDS, WALLS AND PARTITIONS

12. Walls shall not be less than one inch thick and partitions shall be of such thickness and so spaced as to perform their proper functions with regard to form and structure. Each piece of Terra Cotta shall be provided with the necessary anchor holes and hand holes and shall be so formed as properly to engage the structure. Beds generally shall be not less than 4" deep.

WASHES, WEEP HOLES AND DRIPS

13. Projecting courses, cornices and heavy ornamental detail may have washes, drips and weep holes, where shown on the approved shop drawings.

PREPARATION FOR FLASHINGS

14. Where so shown the washes of all projecting cornices and other exposed horizontal surfaces shall have provision made for flashing. All surfaces where the wash pitches inward toward the structure and stops against superimposed work; all balcony floors, and all gutter grades shall have provision made for flashing.

15. Raggles shall be provided to receive gutter linings and flashings when the joints cannot be used for the purpose. Raggles shall be not less than ¾" deep.

15. All capping courses, copings and sills except of the "slip" type, shall have stools and lugs at intersections with vertical surfaces.

JOINTS

17. All joints shall be straight and true and of an approximate uniform width of ¼". All Terra Cotta shall be laid out at the factory to test it for uniformity of joint widths and over-all dimensions. Where necessary to secure accurate dimensions and uniform joint widths, the material shall be sized straight and true.

D.—TRANSPORTATION, STORAGE AND PROTECTION

SHIPMENT, DELIVERY AND CARE

18. Unless otherwise specifically agreed, all Terra Cotta shall be furnished by the manufacturer f. o. b. cars factory,

PENCIL POINTS

with freight allowed to destination. All Terra Cotta shall be carefully packed in hay, straw, excelsior or other suitable material.

REPLACEMENTS

19. If any pieces of Terra Cotta are damaged in transit, the manufacturer shall be immediately notified in writing by the setting contractor and proceed with the remaking of the pieces. The responsibility for the cost of such replacements shall be determined by the point of delivery fixed by the contract under which the Terra Cotta is delivered. If the point of delivery is beyond the immediate control of the manufacturer, the setting contractor shall assume responsibility for the necessary proof of damage.

E.—ERECTION

HANDLING

20. The setting contractor shall receive the Terra Cotta on arrival at the freight yards and shall transfer it without damage from the cars to the building. When the Terra Cotta manufacturer delivers on trucks at the building the setting contractor shall unload and store the Terra Cotta. Terra Cotta shall be stored under cover, not in contact with the ground, stacked without inflammable packing on wood laths or strips, so as to protect it from injury.

MECHANICS

21. All Terra Cotta shall be set by mechanics experienced in the handling and setting of the material.

CUTTING AND FITTING AT THE BUILDING

22. Notice of errors in the manufacture of the Terra Cotta shall be given to the manufacturer immediately upon discovery. Cutting or fitting due to such errors shall be done by the Terra Cotta manufacturer or shall be paid for by him if he fails to do the necessary cutting or fitting promptly upon receipt of notice.

23. Other necessary cutting and fitting of the Terra Cotta that may be required at the building, including all fitting around anchors, steel and iron work and reinforced concrete, shall be done by the contractor for setting Terra Cotta.

SUPPORTING METAL WORK AND ANCHORS

24. *In Connection with Structural Steel.* Beams, channels, angles, T's, plates and fabricated members for supporting Terra Cotta and which are not secured to the structural steel by rivets or short bolts, as shown on the architect's drawings, together with all anchors, hangers, bolts, clips, straps, rods and pins for securing Terra Cotta, shall be furnished and set by the contractor for setting Terra Cotta.

25. *In Connection with Structural Concrete.* The contractor for structural concrete shall furnish and set all supporting metal work imbedded in the concrete and all shelf angles and continuous rods. All such metal work shall conform to the requirements of the setting drawings prepared by the Terra Cotta manufacturer.

26. All other loose iron such as clamps, hangers, clips, straps and pins shall be furnished and set by the Contractor for setting Terra Cotta.

27. All anchors, hangers, bolts, clips, straps, rods and pins for securing Terra Cotta shall be of wrought iron or non-corroding soft steel.

28. Anchors, hangers, bolts, clips, straps, rods and pins for securing the Terra Cotta, except where otherwise shown or specified, shall be of the following minimum sizes:

29. Anchors:—(a) For ashlar or courses balanced on the wall, shall be $\frac{1}{4}'' \times \frac{1}{4}''$ or $\frac{1}{8}'' \times \frac{5}{8}''$, or No. 6 gauge galvanized wire.

30. (b) For projecting courses not balanced on the wall, shall be not less than $\frac{5}{8}''$ round or square bars of equal cross section.

31. Hangers shall be $\frac{5}{8}''$ diameter round bars or other shapes of equal cross section area.

32. Clips and straps shall be $\frac{3}{8}'' \times 2''$.

33. Pins shall be $\frac{1}{2}''$ diameter round bars.

34. Continuous rods on concrete wall faces to which Terra Cotta ashlar is clipped, shall be $\frac{5}{8}''$ diameter round bars which shall be secured to the masonry with $\frac{1}{2}''$ diameter round anchors placed not more than 2' 0" on centers.

35. All steel or iron supporting metal work shall be clean and thoroughly protected with two coats of pure red lead and linseed oil paint, asphaltum applied hot, or other approved protective compound.

PROTECTION OF SUPPORTING METAL WORK

36. Metal work of every description, supporting Terra Cotta, shall be imbedded thoroughly in the masonry backing and when not so imbedded, metal work shall be protected against corrosion by encasing with cement mortar or in cement mortar masonry.

37. When the back of a Terra Cotta course comes in contact with iron or structural concrete in such manner as to prevent the encasing of supporting iron from the rear, an opening shall be made in the top to admit of the placing of the encasing mortar as required above.

MORTAR

38. All cement used for setting mortar shall be of a standard brand of Portland cement fulfilling the requirements both physical and chemical of the standard specifications for Portland cement adopted by the American Society for Testing Materials.

39. All sand used for setting mortar shall be clean, sharp and well graded in size.

40. All mortar for setting and pointing shall be composed of one volume of Portland cement to three volumes of sand. Hydrated lime, not to exceed 9 pounds to the sack of cement, shall be added.

41. The sand and cement and lime, if any, shall be thoroughly mixed dry before any water is added. The use of retempered mortar shall not be permitted.

SETTING

42. All Terra Cotta shall be set true to a line and carefully laid in a solid bed of mortar. All rebates in bed and cross joints from front to back and top to bottom, shall be filled solid with mortar leaving no voids. Each piece of Terra Cotta shall be tamped into place, excess mortar cut off and struck with a jointer or trowel. All sills, wall copings and other capping courses, shall be set in a thick bed of mortar and well pounded down so that the mortar fills all spaces around bottom of webs of Terra Cotta.

43. All Terra Cotta projecting courses shall be so set that the arris casting a shadow shall be true to line.

44. When the Terra Cotta work is of such scope or character that the proper handling and setting of the Terra Cotta require special skill and knowledge, the Terra Cotta manufacturer shall, if required by the contract, furnish a competent Terra Cotta setter to assist in the sorting, selecting and handling of the Terra Cotta, to co-operate with the setting contractor, to assist him when cutting or fitting of the Terra Cotta is necessary, to advise as to interpretation of setting drawings and to help generally in securing rapid, efficient progress during the setting of the Terra Cotta. For such service the setting contractor shall pay such setter full time at his regular wage rate. When the furnishing of such a competent setter involves traveling expenses, the setting contractor shall pay the same and also make an allowance for his board.

45. When the services of such a competent setter are not required under the contract, the Terra Cotta manufacturer may, at his own option and expense, send such a representative to the work who shall perform the above services, and the setting contractor shall co-operate with and aid and facilitate the performance of such services by such representative.

POINTING

46. All joints in Terra Cotta shall be pointed and struck as the setting progresses except in freezing weather. In freezing weather and when repointing is necessary, all joints shall be raked or cut out to a depth of $\frac{1}{2}''$ and the pointing mortar driven into the joint and struck with a jointing tool.

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47. All joints in overhanging Terra Cotta, balustrades, parapets and free standing features shall have joints raked out one-half (½) inch, and pointed with an approved elastic cement.

PROTECTION

48. All uncompleted walls including Terra Cotta and backing shall be protected by waterproof covering at night and at any time when liable to injury from storms or freezing. (Note:—All other protection required for projecting courses, jambs of openings, etc., is provided for under the work of other trades.)

CLEANING DOWN

49. Upon completion of the work, mason's wedges, shoring, supports and centering and all other false work and protections shall be removed and the Terra Cotta cleaned down. If satisfactory results cannot be obtained by the use of abrasive soap or washing powder, a solution consisting of 1½ pints of muriatic acid to a gallon of water may be used. In the use of acid solutions only wooden pails and fibre brushes shall be employed.

GLOSSARY OF TERMS RELATING TO TERRA COTTA

SURFACE FINISH

50. Surface Finish designates the texture of the surface of the clay body prior to application of Ceramic Finish.

51. It may be:

- (a) *Smooth.*
- (b) *Tooled or Drove.*
 - (b1) Eight lines to the inch.
 - (b2) Six lines to the inch.
- (c) *Light irregular drag or combing.*
- (d) *Heavy irregular drag or combing.*
- (e) *Special.*

52. A special Surface Finish like "bush-hammered," "pitted," "vermiculated," etc., involves extra expense and, if required, should be clearly specified.

53. *Surface Finish for unglazed surfaces* may be smooth or may be tooled with a light or heavy drag. Flat surfaces of sufficient width may be tooled, while the curved surfaces of mouldings may be left smooth.

Surface Finish for glazed Ceramic Finish (whether lustrous or mat) is usually made smooth.

54. *Granite Colors*, if unglazed, may be made smooth or with irregular drag, or pitted. A bush-hammered or special surface involves extra expense, and if required should be clearly specified. If glazed Ceramic Finish is used for Granite Colors the surface treatment is usually smooth.

CERAMIC FINISH AND COLOR

55. Ceramic Finish designates the surface and color applied by the ceramic processes of coating, glazing, burning, etc.

56. (1) *Unglazed Terra Cotta*: Terra Cotta with a Ceramic Finish producing an unglazed finish made in various shades of buff, gray, salmon, red and brown. Most colors thus made are vitreous.

57. (2) *Glazed or Enameled Terra Cotta*: Terra Cotta having an impervious Ceramic Finish of a glassy texture which may be either lustrous or mat (sometimes designated as full or dull glazes or enamels) made in various colors.

58. (3) *Granite Color Terra Cotta.*

- (a) *Unglazed Granite Color*:—A mottled Ceramic Finish similar to unpolished granite.
- (b) *Glazed or Enameled Granite Color*:—A mottled Ceramic Finish similar to polished granite, made either lustrous or mat.

59. (4) *Polychrome Terra Cotta or Faience*: Terra Cotta having two or more colors on the same piece.

- (a) *Polychrome, unglazed*:—Unglazed Terra Cotta having two or more colors on the same piece.

(b) *Polychrome, glazed*:—Glazed Terra Cotta having two or more colors on the same piece.

(c) *Polychrome, blended colors*:—Made only in glazed Terra Cotta. If, in polychrome glazed work, the colors are not to be separated by definite lines or contours of ornaments, but are to be blended together by brush treatment, or the like, the term "Polychrome, blended colors" shall be used. The character of work expected should be explicitly described.

(Note. For polychrome work always clearly specify the work to be done and the number of colors on a single piece.)

60. (5) *Special*: There are a number of Ceramic Finishes used by individual manufacturers the processes for which are patented or the names copyrighted which are not included in this Glossary.

61. (6) *Semi-Glaze*: An ambiguous term which should never be used.

62. (7) *Fire-Gilding*: A coating of gold glaze either mat or lustrous, fixed by an additional burning. (The area of surface to be gilded should be clearly described.)

SHORT FORM SPECIFICATION

FOR

THE MANUFACTURE, FURNISHING AND SETTING OF TERRA COTTA

For Incorporation in the Architect's Specifications.

To be used in connection with Standard Specifications and the Standard General Conditions of the American Institute of Architects.

63.—(Note to architect:—The Standard Specification does not state who shall set the Terra Cotta, who shall provide wood centering, scaffolding, hoists, cover boards and protection (except tops of walls against weather). It does not include any cement or concrete work in connection with forming gutter grades and washes on projecting courses and features, or the furnishing or setting of sheet metal flashings and gutter linings. It does not include the furnishing and erection of metal supporting members which are riveted or bolted with short bolts to the structural steel or structural concrete. It requires the architect to show on his drawings the sizes and arrangement of rolled or fabricated structural shapes used for supporting Terra Cotta. (See notes on corollary clauses at end of this specification for the work of other trades to take care of such omissions).

GENERAL CONDITIONS

64. The General conditions of the American Institute of Architects, Third Edition, shall form a part of this specification and contract and all work shall be subject to the provisions thereof.

WORK INCLUDED

65. The work included in the contract comprises the manufacture, (and) delivery (and setting) of all Terra Cotta in accordance with the contract drawings and these specifications.

66. All (here insert a complete description of work) shall be of Terra Cotta.

WORK NOT INCLUDED

67. The following items are not included as a part of the contract for furnishing (and setting) Terra Cotta.

- (a) Masonry backing. See specifications for (.....)
- (b) The furnishing and erection of metal supporting members which are riveted or bolted with short bolts to the structural steel. See specifications for (.....)
- (c) Cement or concrete grading for gutters, washes, floors, etc. See specifications for (.....)
- (d) Furnishing and setting sheet metal, see specifications for (.....)

MATERIALS AND WORKMANSHIP

68. All Terra Cotta work under this contract, except as hereinafter specified, shall be executed in strict conformity with the Standard Specification for the Manufacture, Furnishing and Setting of Terra Cotta, adopted by the National Terra Cotta Society; which Standard Specification is hereby declared and made a part of this

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specification with the same force and effect as if written herein in full.

SURFACE FINISH, CERAMIC FINISH AND COLOR

69. All Terra Cotta (Note:—If several textures or finishes are to be used give location of each) shall be

70. (1) *Unglazed.*

Surface Finish of flat members shall be

(a) *Smooth.*

(b) *Tooled or Drove.*

(b1) Eight lines to the inch.

(b2) Six lines to the inch.

(c) *Light irregular drag or combing.*

(d) *Heavy irregular drag or combing.*

(e) *Special.* (Note:—Special surface finishes like "bush-hammered," "pitted," "vermiculated," etc., should be described.)

71. The surface finishes of mouldings and curved surfaces generally shall be

(Note:—Unless otherwise specified these surfaces are generally made smooth.)

72. (2) *Unglazed Granite Colors.* Surface finishes of flat members generally shall be (a, b, c, d, e). The surface finish of mouldings and curved surfaces generally shall be

(Note:—Unless otherwise specified these surfaces are generally made smooth.)

73. (3) *Lustrous or Full Glazed or Enameled.* Surface finish shall be

(Note:—Unless otherwise specified these surfaces are generally made smooth.)

74. (4) *Mat or Dull Glazed or Enameled.* Surface finish shall be (See Note 3).

75. (5) *Lustrous or Full Glazed or Enameled Granite.* Surface finish shall be (See Note 3).

76. (6) *Mat or Dull Glazed Enameled Granite.* Surface finish shall be (See Note 3).

77. The color of the Terra Cotta generally shall be (.....) as per approved sample or samples.

78. (7) The Terra Cotta comprising..... (described here in detail.....) shall be (two, three, four) color polychrome. Colors (....specify where....) shall be blended.

79. (8) The surface finishes of (....specify where....) shall be fire gilded with (mat or lustrous) gold glaze.

(Note:—Sections 1, 2, 3, 4, 5, 6, are alternates. If there is no polychrome work or no fire gilding omit sections 7 and 8. Sections a, b, c, d, e, are alternates for surface finish).

DELIVERY

80. The Terra Cotta manufacturer shall furnish and deliver (f. o. b. cars factory with freight allowed to destination (on trucks at the site of the building) (and set) all the Terra Cotta as indicated on the drawings or as here described.

SETTING

81. All Terra Cotta shall be set by the (Terra Cotta manufacturer) (mason....). For such anchors and metal work as are to be furnished by the setting contractors see Standard Specification.

(Note to architect:—If the Terra Cotta manufacturer is to set his material include the following clause in the Terra Cotta specification. See also suggested clauses at end of this specification to take care of these omissions and for incorporation in the specifications for the work of other trades).

82. "Hoisting service, storage space, setting mortar, delivered on the scaffold, outside and inside scaffold runways and platforms, water, temporary light and removal of refuse, shall be furnished to the Terra Cotta manufacturer free of charge by the (...mason contractor...)"

TERRA COTTA SETTER

(Note to architect:—If the work is of such scope or character that the proper handling and setting requires special skill, the following clause may be inserted: "The Terra Cotta manufacturer shall furnish at the expense

of the setting contractor a competent Terra Cotta setter to assist in the sorting, selecting, handling and setting of the Terra Cotta.")

JOINTS

83. (The Standard Specification does not require any joints to be rubbed. If rubbed joints are to be required it should be so stated here.)

84. The Standard Specification requires all joints to be approximately 1/4" wide. If joints of a different width are desired it should be so stated here.)

SUGGESTIONS FOR COROLLARY CLAUSES

85. 1.—If the Terra Cotta is to be set by the Terra Cotta manufacturer, a clause similar in purport to the following should be included in the general requirements relating to masonry or brick work:

86. "Terra Cotta will be furnished and set by the Terra Cotta manufacturer. Hoisting service, storage space, setting mortar delivered on the scaffold, outside and inside scaffolds, runways and platforms, water, temporary light and removal of refuse shall be furnished to the Terra Cotta manufacturer, free of charge, by the (mason contractor)." A provision should also be included to the effect that the (mason contractor) shall construct the brick (concrete) backing for the Terra Cotta and "The backing shall proceed simultaneously with the setting of Terra Cotta. Each piece of Terra Cotta shall be backed up solid with brick and mortar, so as to make a perfect bond and homogeneous mass between wall lines. This backing shall extend beyond the wall line when necessary to structural stability. If concrete is used it shall not be stronger than a 1 to 9 mixture."

Also a provision under which the (mason) contractor shall place all concrete or cement grading for gutters, washes and balcony, loggia or other floors.

87. In the case of parapet walls specifications should state that flashing if used shall be carried through the wall, or if flashing be not used the back of the parapet wall shall be dampproofed and the waterproofing carried through the wall.

88. 2.—In the specification for sheet metal work there should be included a clause similar in purport to the following:

"The washes on all cornices and other exposed surfaces, where shown or specified, shall be covered with (.....) which shall be turned up against vertical surfaces (cap flashed) and cemented into the raggles provided for the purpose in the Terra Cotta."

89. 3.—Structural Supports.

Under "Structural Steel," a clause similar in purport to the following should be included:

"Beams, channels, angles, T's, plates and fabricated members for supporting Terra Cotta, and which are secured to the structural steel with short bolts or rivets, shall be furnished and erected by the contractor for (structural steel.)"

90. Under "Structural Concrete" a clause similar in purport to the following should be included:

"Steel beams, channels, angles, T's, plates, fabricated brackets and outlookers and other members, bolts, rods, wires, anchors, and sleeves for supporting Terra Cotta, which are imbedded in the structural concrete, also shelf angles and continuous rods attached to structural concrete shall be furnished and set by the contractor for structural concrete, in strict accordance with setting drawings prepared by the Terra Cotta Manufacturer." (For information as to the sizes and character of bolts, rods, anchors, etc., see Section E paragraphs 24 to 35 inclusive on "Supporting Metal Work and Anchors" of Standard Specification for the Manufacture, Furnishing and Setting of Terra Cotta. Such supports should be clearly shown on the drawings.)

91. 4.—Under "Rough Carpentry" or other suitable division of work, there should be included a clause providing that the contractor shall furnish, set and maintain all centering, cover boards, boxing and protection for Terra Cotta, and remove the same upon completion of the work.

Additional copies of this specification will be sent free on request to any reader of PENCIL POINTS. Address National Terra Cotta Society, 19 West 44th St., New York.

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PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Brass Pipe and Piping.—Illustrated treatise covering the production of brass pipe, corrosion of various pipe metals, plumbing layouts and other useful data for the architect, draftsman and specification writer. 48 pp. 8 x 10½. Bridgeport Brass Co., Bridgeport, Conn.

Architectural Terra Cotta—Standard Construction.—A collection of 70 full page plates showing best types of construction in connection with the use of Architectural Terra Cotta. Fully indexed. Size of page 10½ x 14; size of plates 8½ x 11. Bound in leather book cloth. National Terra Cotta Society, 19 West 44th St., New York City.

Present Day Schools.—Illustrated brochure covering the application of terra cotta to modern school buildings. 32 pp. 8½ x 11. National Terra Cotta Society, 19 West 44th St., New York City.

Better Banks.—Illustrated brochure treating of modern bank buildings, large and small. 32 pp. 8½ x 11. National Terra Cotta Society, 19 West 44th St., New York City.

Color in Architecture.—Brochure illustrated in color and with numerous engravings in sepia, on the basic principles of the application of color in available mediums. 8½ x 11. 38 pp. National Terra Cotta Society, 19 West 44th St., New York City.

Southern Pine Manual of Standard Wood Construction.—Useful book containing hundreds of tables and other useful data covering all types of wood construction. Handsome leather binding. 186 pp. 4½ x 7. Price \$1.50 per copy. Southern Pine Assn., New Orleans, La.

Service Sheets and Blue Prints.—The Alpha Portland Cement Co. of Easton, Pa., has prepared a series of service sheets and blue prints showing many types of concrete construction. Valuable to all architects, draftsmen and specification writers.

Stand Pipe Detail and Specification—A.I.A. File No. 29 E 2.—Complete specification data for fire lines, etc. Blue prints. 8½ x 11. W. D. Allen Mfg. Co., 566 West Lake St., Chicago, Ill.

Nineteen Stories of Lime.—New booklet on the subject of Hydrated White Lime for use in concrete work. Profusely illustrated. 36 pp. 6 x 9. National Lime Assn., 77 W. Washington St., Chicago, Ill.

Data Book and Standard Specifications.—Electric or engine driven pumps and complete water supply systems. Portfolio containing complete data on the subject. 28 pp. Standard Filing size. Duro Pump & Mfg. Co., Dayton, Ohio.

Glue Problems and How to Meet Them.—Hand book on the subject for all interested in fine cabinet work, furniture trim, etc. 20 pp. 4 x 9. Monite Waterproof Glue Co., 1628 No. 2nd St., Minneapolis, Minn.

Ramps.—Brochure dealing with new type of construction for garages, service buildings and factories. 24 pp. A.I.A. classification. 8½ x 11. Ramp Building Corp., 50 Church St., New York City.

Guide to Good Stucco.—Brochure illustrated in color with detail drawings, suggestions for specifications and much other useful information. 30 pp. 8½ x 11. Atlas Portland Cement Co., 25 Broadway, New York City.

Modern Floors.—Illustrated booklet on subject of flooring for hospitals, schools, banks, institutions and many other types of buildings. 24 pp. 7¼ x 10¾. Marine Decking & Flooring Co., Philadelphia, Pa.

Acoustile.—Illustrated booklet on the subject of acoustics. Color plates covering treatment of auditorium and other interiors. 16 pp. 8½ x 11. The Mazer Acoustile Co., 1209 Arch St., Philadelphia, Pa.

Steel Partitions.—Blue prints showing construction of adjustable hollow steel partitions. Useful in many types of buildings. Empire Steel Partition Co., Inc., College Point, N. Y.

Wall and Ceiling Handbook.—Data on wall and ceiling construction for the residence. 16 pp. 5½ x 7¼. The Bostwick Steel Lath Co., Niles, Ohio.

Garden Pottery.—Catalog illustrated in sepia covering many articles in terra cotta for the garden and interior. 24 pp. 9¾ x 12. The Galloway Terra Cotta Co., Walnut and 32nd Street, Philadelphia, Pa.

Instruction Sheet.—Details of standing seam horse head zinc roofing. New Jersey Zinc Co., 160 Front St., New York City.

Lithoprints.—Portfolio describing methods of making lithoprints, their uses and advantages. Loose-leaf binder. 8¾ x 11¼. The Lithoprint Co., of New York, 41 Nassau St., New York City.

Water Filters.—Bulletin No. 501 describing Graver horizontal pressure water filters. 8¼ x 11. 12 pp. The Graver Corp., East Chicago, Ind.

Vermont Marble Details.—Series of 18 plates showing exterior and interior construction. Vermont Marble Co., Proctor, Vt.

An Electrical Wiring Specification.—Specification covering electrical wiring devices of all kinds. How to lay out a completely wired home. 12 pp. 8½ x 11. The Bryant Electric Co., Bridgeport, Conn.

Hospital Plumbing.—New catalog on the subject covering complete line of plumbing equipment for the hospital. Trenton Potteries, Trenton, N. J.

Sound Deadening.—Booklet covering subject of sound deadening and heat insulation in diagram, picture and text. Correct methods of construction for many varied uses. Standard A.I.A. filing size. 7½ x 10½. 28 pp. Samuel Cabot, Inc., 141 Milk St., Boston 9, Mass.

Rail Steel for Concrete Reinforcing.—Treatise on subject of reinforcing bars. Dept. E., Laclede Steel Co., St. Louis, Mo.

Modern Window Operating Information.—Illustrated catalog on Pullman sash balances. Pullman Mfg. Co., 237 South Ave., Rochester, N. Y.

Telescopic Hoists.—New catalog in two colors. Illustrated with photographs of installations for handling ash cans and other loads between floors. Specifications. 24 pp. 8½ x 11. Gillis & Geoghegan, 548 W. Broadway, New York City.

Portfolio of Granite Studies.—Series of plates showing structural details. National Building Granite Quarries Assn., 31 State St., Boston, Mass.

Up-to-date Electrical Specialties.—Catalog No. 6. Convenient pocket size data book on complete line of specialties. 283 pp. 3 x 4½. Connecticut Electrical Mfg. Co., Bridgeport, Conn.

A Watertight Sidewalk Door.—Leaflet giving full report of committee of competent investigators. Construction details, specifications and prices. The H. W. Covert Co., 137 East 46th St., New York City.

Marble Portfolio.—Loose-leaf portfolio showing 40 different varieties of marble in their natural colors. Color plates 6 x 8. A copy of this portfolio handsomely bound in leather will be sent only to architects applying for it on their own letterhead. Tompkins-Kiel Marble Co., 505 Fifth Ave., New York City.

Improved Mechanisms in Builders' Hardware.—Complete catalog showing detail drawings, and instructions for installing mechanical builders' hardware such as casement hinges, casement operators, hinges and pivots, and overhead door checks. Catalog is 6 x 9. 58 pp. The Oscar C. Rixson Co., 1210 Architects Bldg., New York City.

Sylphon Heating Specialties.—Technical handbook containing valuable tables, specification data, etc., for all types of steam and hot water heating. 3½ x 6½. 144 pp. The Fulton Co., Knoxville, Tenn.

Swimming Pool Sanitation.—Special bulletin covering this subject with diagrams and illustrations of typical pools. 8 pp. 8½ x 11. The R. U. V. Co., 383 Madison Ave., New York City.

Lighting Bulletin.—Booklet illustrated in color showing types of units for various uses. Tables, prices, chart for calculating illumination required. 8 x 10½. 30 pp. Edwin F. Guth Co., St. Louis, Mo.

Artists Papers.—Attractive book describing full line of hand made papers for all uses. 24 pp. 6 x 9. Canson & Montgolfier, 461 Eighth Avenue, New York City.

Pencil Sketching.—Portfolio of 12 full page pencil sketches by Bernhardt Mueller and others. 9 x 12. Eberhard Faber, 37 Greenpoint Avenue, Brooklyn, N. Y.

The Hoffman Drawing Stand.—Booklet describing drawing stands and products for various requirements in the drafting room. Hoffman Drawing Co., 281 Meigs Street, Rochester, N. Y.

The Royal Ventilator Co.—Data book with specification material covering subject of ventilation. 48 pp. 4½ x 9. Royal Ventilator Co., 415 Locust Street, Philadelphia, Pa.

Rooflight Construction.—Blue prints showing full size details of Keppler Glass Construction. Frederick L. Keppler, 1799 First Avenue, New York City.

PENCIL POINTS

THE NEED FOR SAFETY IN WALKWAYS

BY H. WEAVER MOWERY

*Past President, American Society
of Safety Engineers*

HOW, in so complicated a business as building, shall a proper balance of essentials be kept, with enthusiastic specialists each vigorously pursuing their particular activity and each careless of the other?

For instance, firesafe construction, though of vital importance, occupies a pre-eminent position in the minds of all associated with the building design. This condition has been brought about through unremitting publicity and agitation by manufacturers of fireproof materials of all sorts, the formation of national associations of fire prevention, the publication of magazines, and kindred activities. But in obtaining this desirable result, is it not possible that other matters of perhaps equal importance, lacking the organization and the publicity, came to be more and more neglected until finally almost entirely overlooked?

The problem of providing safe walking surfaces seems to have been eclipsed in this fashion. We have come to take it as a matter of course when a person falls down stairs and is severely injured or killed. A short time ago, in Chicago, a leading building contractor fell down stairs and died within a few hours. Exactly five and one-half lines was the amount of space given in the newspapers announcing this fatality. But when an individual is cremated in a burning building, a special representative of the press is assigned to the story, and we get two or three columns with glaring headlines. Yet there are more than twelve times as many people killed by falls as there are in burning buildings. For instance, in Chicago, in 1915, there were eight people killed in burning buildings, while 154 were killed by falls on floors, stairs, and sidewalks, other than through slipping on ice and banana-peels. From 1911 to 1922 in this city 4,206 persons were killed by falls, 1,804 of which occurred on stairs, floor and street. In New York (Manhattan) 1,488 deaths through falls on stairs and sidewalks have been reported to the Chief Medical Examiner's office from 1912 to 1920 inclusive. Statistics from the Labor Department of the four states, Massachusetts, New York, Pennsylvania and Ohio, show that slipping and tripping injured as many workmen as were injured by cranes, gears, belts and pulleys, planers and jointers, ladders and elevators, all combined. In the state of Ohio, slipping and tripping casualties in the industrial plants cost approximately \$153,000 for compensation, hospital and medical expenses alone. Such figures show beyond a doubt that something is wrong with the surfaces upon which people must work and walk, or with people themselves.

A casual tour of inspection reveals amazingly unsafe conditions in tread surfaces. Architects and engineers are not responsible for all of these unsafe conditions. Certain floors, if properly cleaned, are not unsafe, but if the janitor or superintendent of a building will persist in using soap powder instead of the proper sort of floor cleanser, their surface is dangerously slippery and, of course, the designer of the building is not responsible for such a condition. But there are many conditions coming directly under the supervision of the architect and engineer which can be corrected by those charged with the supervision of the designing and the specification of the materials.

An analysis of the casualty reports from sixty-five companies in twenty-two states for a period of seven years by the Accident Prevention Committee of the National Electric Light Association, published in their annual proceedings, shows that slipping, tripping and falling were by far the greatest cause of accidents resulting in lost time of one day or more. It should be noted by the designers of buildings that the charts prepared by this Committee indicate that the majority of falls are not from high places

such as scaffolds, temporary supports, poles, etc., as is usually thought, but 38.6% of all falls occur on stairs and floor levels.

Whether stair accidents are caused through the carelessness of the individual, or because of improper tread and riser dimensions; or through unsafe tread surfaces is a question often raised. The experience of one of our great eastern railroads is very interesting. It conducted the only authenticated service test of which there is definite knowledge, to show the merit or demerit of a type of tread from a safety viewpoint. On a newly constructed stairs, equipped with one type of tread, 141 accidents were reported in less than two months. The type of tread then was changed and not a single fall was reported in the three months following. There was no change in tread or riser dimensions, no additional handrails were put in, lighting conditions were the same as before the accidents ceased, and it is to be assumed that the people were just as careless and were in just as great a hurry. But the change in the type of the tread alone was responsible for the elimination of falls in this case.

It is essential that the tread and riser dimensions are properly proportioned and that the nature of the material of which the stair treads are composed should be such that slipping on them will be prevented and wear reduced to a minimum.

THE UNIVERSITY OF MICHIGAN

THE College of Architecture of the University of Michigan is pleased to be able to announce that Mr. Eliel Saarinen of Helsingfors, Finland, will be Visiting Professor in Architectural Design during 1923-24. He will criticize in advanced and graduate designing.

Mr. Saarinen, one of the leading architects of Europe, recently became better known in this country through his remarkable design submitted in the Chicago Tribune Building competition. To students of European architecture he has, however, long been known as an architect of unusual ability. In the international competition held in 1906 for the Peace Palace at the Hague his design was one of the noteworthy ones and is published in the volume devoted to this competition. It is interesting to note that his more recent work is marked by the same spirit. He has not only designed important buildings in his own country, but like so many European architects has been active in the field of city planning.

The *Western Architect* for July has a number of illustrations of Mr. Saarinen's work and an appreciation by Mr. I. K. Pond, a former president of the American Institute of Architects. Mr. Louis H. Sullivan's discussion of the Tribune competition in the *Architectural Record* for February is a noteworthy comment on Mr. Saarinen's ability.

COSTUME DESIGN AND ILLUSTRATION

UNDER the title "Costume Design and Illustration" (\$3.50 net), John Wiley & Sons, Inc., New York, have just published a useful book by Ethel H. Traphagen, instructor and lecturer at Cooper Union, The New York Evening School of Industrial Art and Brooklyn Teachers' Association Classes. This book will be found helpful for reference in preparing costumes for entertainments by architectural clubs and the excellent bibliography it contains makes it a guide to a most valuable mass of reference material on historic costume design. It will also be found useful in cases where period costumes are required in mural decorations or other designs associated with architectural work.



An attractive postal card announcement sent out by The T-Square Club, Philadelphia, is reproduced above.

THE DRAFTSMAN'S PROBLEM

FROM one of our readers we have received a letter from which we quote as follows:

"In reading the letters which you have recently published concerning the relation of the draftsman to the checker and incidentally to the employer, it has seemed to me that a discussion of this kind has some danger of degenerating into a sort of free-for-all of abuse and recrimination on both sides. Enough of this sort of thing goes on daily, hourly, in the drafting room, and it may be as well to avoid it in the architectural publications.

However, there is no doubt that the situation of draftsmen and designers is very far from ideal, and I do not believe that there exists elsewhere a class of men who work under more discouraging conditions. Consider that a man in this line of work has in nine cases out of ten made his investment in a college training, years of study and practice and probably foreign travel. His ability and his qualifications place him among the highest type of skilled workers. The conditions of his employment are less permanent and secure than that of the coal miner, the seaman or the agricultural worker all of whom are classed as unskilled labor. His income is small—the draftsman of the best type is not often able to command a salary of three hundred dollars a month.

He has usually the highest refinement of taste—he must have, to be able to design—and his general culture is broad and liberal, and yet he is unable to live among or to possess the things that he has been trained to create for others.

I do not wish to belittle the sincere endeavors of many employers to better the position of the draftsman, but in the majority of cases the employe's feeling of close association with his office is so lacking that he cannot and does not produce the quality of work of which he is capable.

In almost any other occupation, high grade men have an agreement, most often a hard and fast contract, with their employers, ensuring them of the duration of their engagement.

Consider sales engineers, promoters, research experts and foreign trade representatives—no high grade man in these lines would consider giving his services on the same basis as that of the journeyman carpenter or the unskilled workman, and yet that is exactly what the draftsman does.

On one week's notice his salary may be reduced; on two weeks' notice he may be discharged. There is here, certainly, no incentive to loyalty, no inspiration, no possibility of the spirit of craftsmanship and love of fine work that is the very life of architecture.

It seems to me that the fad for "efficiency" has wrecked many organizations. I have in mind one office where a younger member of the firm was stricken with this disease and established as thorough a system of costs, of time distribution, or work-per-man-per-hour, of espionage and petty discipline that the esprit which had been the greatest asset of this office was destroyed, and their work has shown it ever since. I can think of no vocation where the methods of Henry Ford are less applicable than in the practice of architecture, or where the spirit of "Production" is less to be desired. To an organization of capable and loyal men "efficiency" systems are an insult and a curse.

How desirable it would be to keep architecture a bit different from manufacturing and business, although it be intimately related to both of them. Profit is necessary, practical excellence is indispensable, but let us not push these ends to the extreme of discouraging the true purpose of architecture, which is to create beauty and harmony as things inseparable from true utility and human progress.

DRAWING CONSTRUCTION DETAILS

(Continued from page 26)

for the subordinate divisions within this area. The choice of the right weight of lines for the scale of the drawing, clean, workmanlike draftsmanship and a good arrangement of the details on the sheet are essential if the drawing is to have a satisfactory appearance. It is well to study the arrangement of details by making a rough sketch of the sheet before beginning the drawing. Attention should be given to neatness of the lettering of titles and notes, and one should see that the scale is always clearly indicated.

BOOK OF THE TRIBUNE COMPETITION

THE desire manifested by architects everywhere to see the designs entered in the hundred thousand dollar prize competition for the new building of the Chicago Tribune has been met by the publication of "The Book of the Chicago Tribune Tower Competition" by the Chicago Tribune. This book consists of 680 pages, is 8¼ x 12¾ inches, and well bound. It is sold at the moderate price of five dollars. It contains besides the program, biographies of prize winners, etc., twenty-five views of the three prize winning designs and the southwest perspective drawing of the others. It contains the 260 designs received from architects of twenty-three countries.



*Reed Memorial Chapel, Mountain Grove Cemetery, Bridgeport, Conn.
Donn Barber, Architect. Drawing by John D. Moore.*

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*Post Office Square: The Angell Monument; The Post Office; The National Shawmut Bank.
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FOR SALE: Binders for Pencil Points. A good strong binder to hold 12 copies. Stamped in Gold. Price \$1.50 each. The Pencil Points Press, Inc., 19 East 24th St., New York.

FOR SALE: Bound volume of PENCIL POINTS for the year 1922. Bound in cloth, lettered in gold. Price \$5.00. The Pencil Points Press, Inc., 19 East 24th Street, New York City.

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VISUALIZATION

THE articles and illustrations in this issue represent various steps in the visualization of architectural design, from the making of the embryonic sketch to the preparation of the most carefully finished presentation drawings—and always the mastery of the means of graphic expression is an important factor.

Crude as the rough sketch of an idea for a marine museum by Roger Expert appears, it is the work of a master of drawing, a man whose name is familiar to everyone who is acquainted with the premiated work of the *concours* at the *Ecole des Beaux Arts*. In setting down his idea he has not let any thought of the appearance of his drawing clog his mental processes, or distract his attention from the problem. It is the kind of sketch a man makes on the back of an envelope or on any scrap of paper that may be at hand. The first sketch of many a monumental building has been made on the table cloth of some restaurant. This is a true embryonic sketch, it is not an *esquisse* in the accepted sense. Such a sketch means a great deal more to the man who makes it than it does to anyone else—he reads into it many things that he has in his mind. Its making serves him in two ways, it helps him in visualizing his idea and serves as a memorandum of his *parti*. A man's first reaction to a problem is often the best, it is a fleeting impression often and needs to be fixed on paper or at least drawn out in some way in order that it may be preserved. Even drawing it on a table cloth causes the idea to have a definite form that is more easily held in the memory than a solution that has never been drawn out at all. The embryonic sketch that sets forth the main points and leaves one free to make adjustments that will take care of the myriad minor considerations is the best starting point in the development of a design. Such a sketch leaves the idea, as one friend of the writer well expresses it, *fluid*, brings it out of the nebulous state into a condition in which it is easily workable, rather more pliable than the condition expressed by *plastic*. The importance of making the right kind of embryonic sketch, one that is definite and not to be departed from so far as the main idea is concerned, but not hard and fast in any other way, is of so much importance that much space has been given to the subject here. It is not only in Mr. Milliken's article that this matter is taken up but in Mr. Breiby's article. Mr. Breiby carries forward the description of the process from the point discussed by Mr. Milliken and shows how the idea is further developed by the

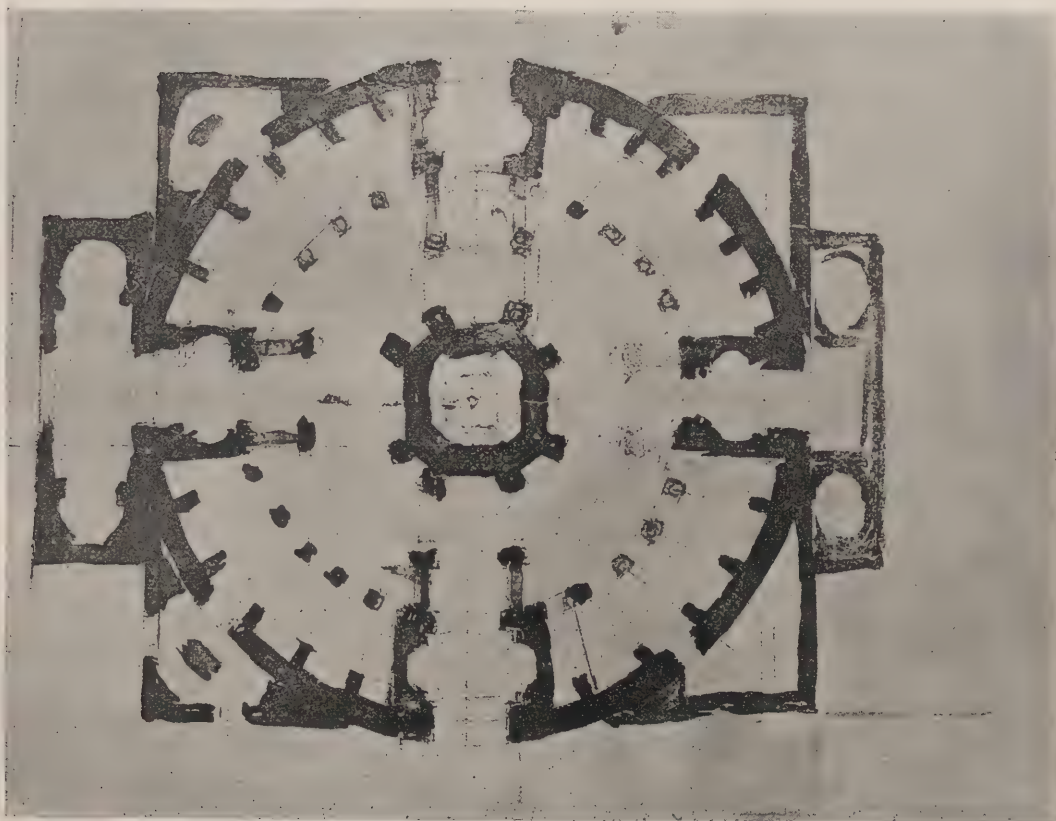
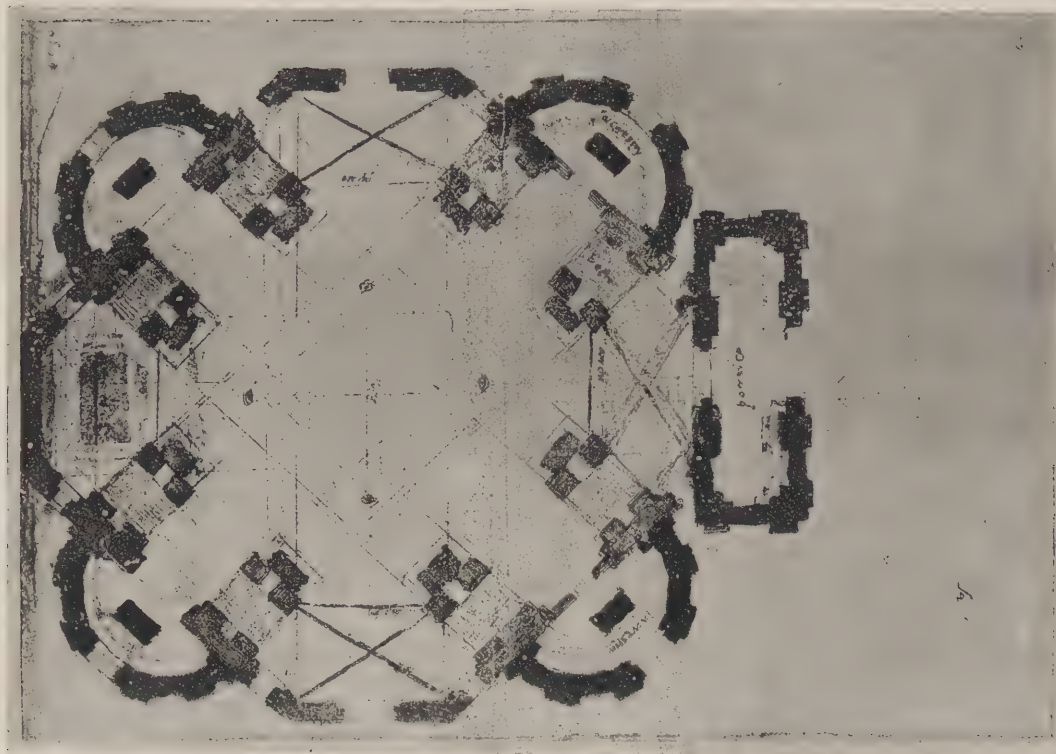
means of study sketches and simple presentation drawings in plan and elevation. Mr. Swales takes up the matter in turn and goes into the technique of rendering the finished presentation drawings that show the fully studied design. Together, these articles represent architecture in the making—and in every case it is a matter of visualization. It is very fortunate that we are able to show an embryonic sketch by the late Charles Follen McKim, and the front elevation of the set of competition drawings for the New York Public Library by Carrère & Hastings, also a remarkable example of fine presentation drawing, a drawing of the New Theatre, by the latter. In order that the reproductions of the drawings of the New York Public Library and of the New Theatre may be of the greatest possible use to our readers portions of these drawings are shown here at the exact size of the originals and the gradations of tone have been preserved so far as is possible in a reproduction.

Visualization of a different kind is represented by the landscape fantasy in pencil by Theodore de Postels which is shown on one of the plate pages. This is one of many fantasies made by Mr. de Postels as an expression of his longing for the scenes of his native Russia during his first winter of residence in this country. These are true fantasies, representing memories and impressions but not depicting any particular bits of nature. In contrast to this drawing is shown a drawing by the same artist, the grand staircase of the Capitol at Albany, that is photographic in its detail and infinite gradations of tone. Still another manner of this artist is shown in the drawing on the cover of this issue.

The photograph by Frederick Boissonnas brings vividly to one's mind the beauty of the little temple of Nike Apteros. The etchings by D. Y. Cameron and Charles Meryon charm us with their rendering of quaint architecture. Paper and pencil, etching plates and printer's ink, all vibrant with life.

The importance of drawing as an aid to the visualization of architectural designs is so clearly evident that it would seem as though sufficient attention would naturally be given to training in free-hand drawing such as sketching and drawing from life, but in too many instances these branches are more or less neglected. Since the ability to use the pencil with freedom and sureness is essential in the making of study sketches and in the rendering of presentation drawings, it is well worth the while of every student and every architect to do as much sketching as possible.

PENCIL POINTS



Figures 6 and 7. Sketch Plans for a Church by Michel Agnoli. From "Die Handzeichnungen Michel Agnoli's Buonarrote" by Karl Frey.
Courtesy of The Metropolitan Museum of Art.

THE EMBRYONIC SKETCH

BY HENRY OOTHOUT MILLIKEN

A PAINTER or a sculptor has a great advantage over an architect in being able, with his own hands, to realize his idea and give it its concrete form. We are forced to have other people construct our ideas for us, which is a long and complicated process. To make the client willing to buy the idea and the workmen able to build it, we have to convey it to them by conventional designs, figures and words, on a flat sheet of paper. With all this complication it is a wonder that there is so much good work really built. Our quickest method, when we can't get someone to understand what we are driving at, is to whip out a pencil and make a perspective or a plan and elevation. Our most direct method of personal expression is therefore the sketch, and this article is written to call attention to the lack of training in its use and to suggest that its importance be more fully appreciated.

The preliminary sketches called for by the Beaux-Arts Society and the Competition for the Rome Prize, give the student a great chance to perfect his technique. The reason such drawings are demanded (esquisses as they are sometimes called), is not always understood and we will therefore discuss them for a moment:

First of all, it is the finest sort of training in thought and in logic. It forces one to concentrate all one's mind on the solution of the problem; to concentrate until thoughts begin to take form. It is not often that a clear image with every detail will immediately crystalize in one's brain, but the big masses and broad lines of a treatment will little by little take shape in the

mind. The chief requirements will group themselves in the order of their relative importance with the conditions of site, construction, practicability and beauty forcing them into a unity.

To any problem there are usually several good solutions. A very well known foreign teacher has said, "There is no *best* solution of an architectural problem; what counts is the thoroughness with which the one chosen is worked out." This is what keeps architecture a live art, just as the inevitable

single answer to a mathematical problem makes mathematics a deadly science. After thinking hard about a problem it is probable that a solution will occur to one almost immediately—a germ of an idea at least. This is an embryo: "A thing conceived, but not yet developed or executed," and the first note of it may take some such fluid form as Figure 1. Some men develop their ideas from this point on tracing paper, until assured of the feasibility of the scheme from every point of view and of its possibilities.

Some make their first sketches in perspective, in this way keeping closer to reality. Through this building planes are passed as in solid geometry and the plans and sections given by them studied until the scheme is proved to be feasible and to have possibilities not yet fully conceived. A true esquisse is then made, not tying one down to nonessentials but clearly indicating the guiding thought, or what is known in France as the "parti." The foreign custom is to make this drawing in copying ink which allows an exact copy to be kept by the student.

(Continued on page 57)

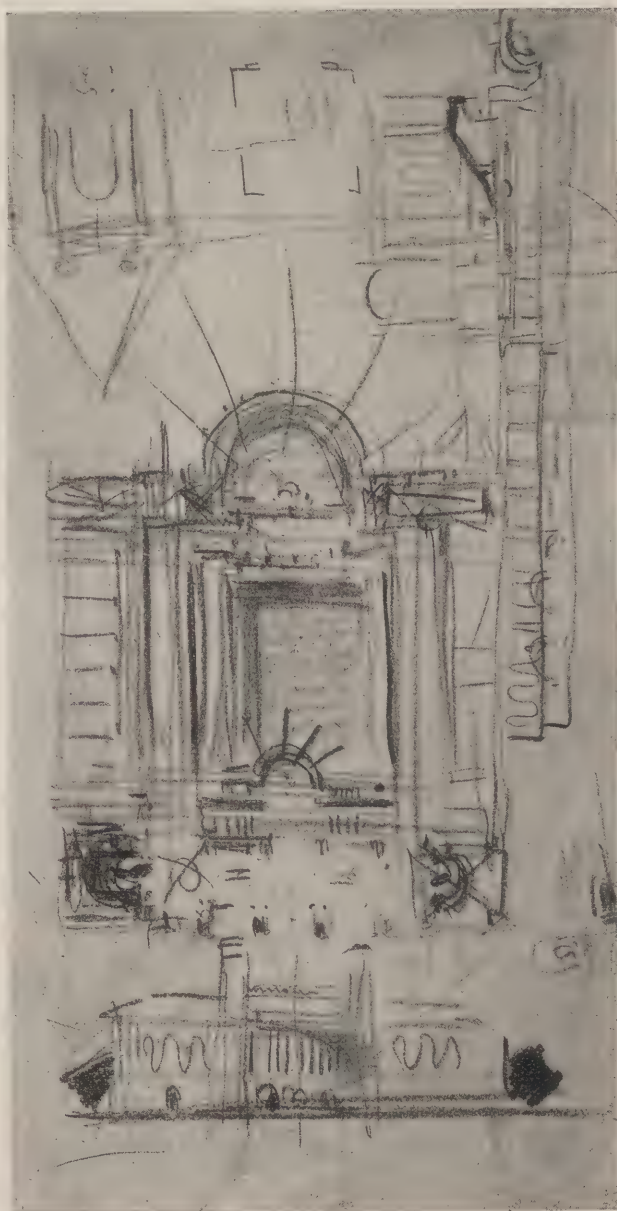


Figure 1. Sketch for a Marine Museum by Roger Expert.

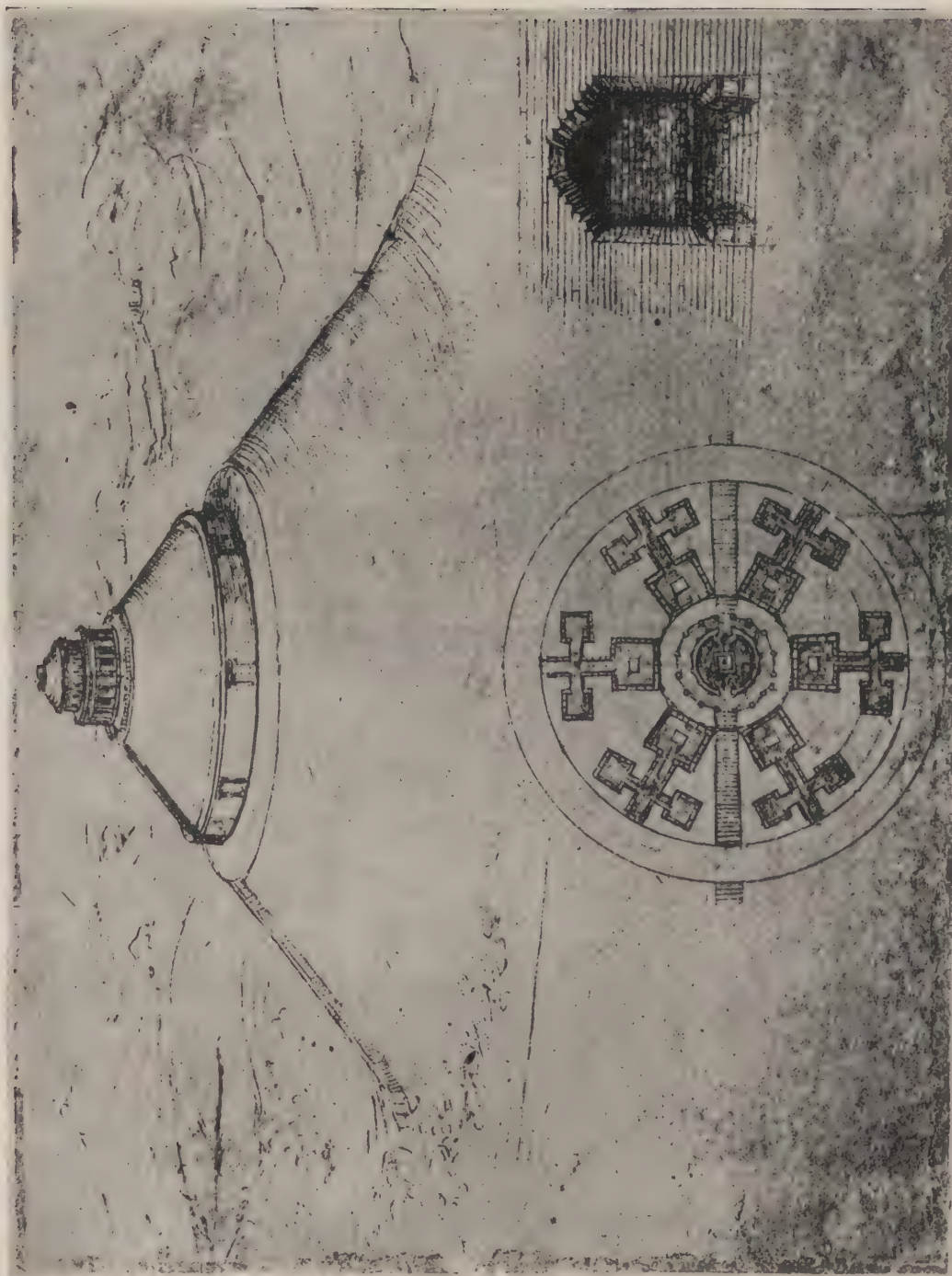
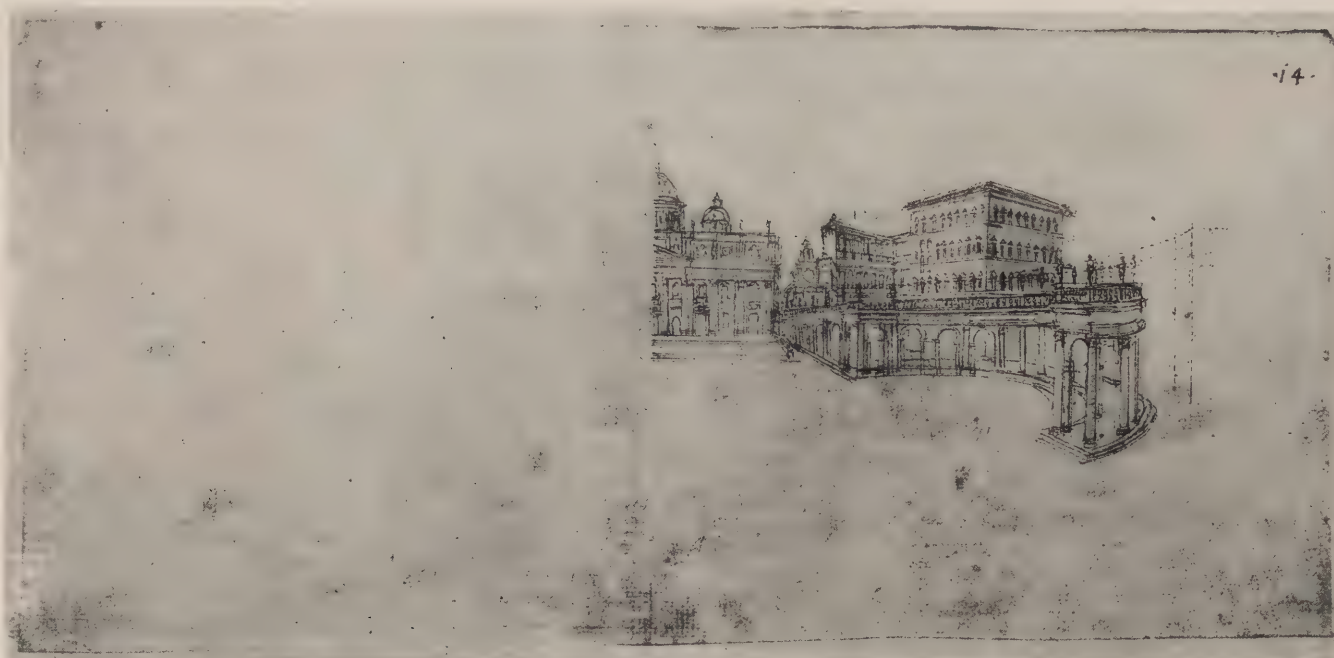


Figure 5. Sketch for a Mausoleum by Leonardo da Vinci. From "Leonardo da Vinci" by Giorgio Vasari.
Published by Luigi Pampaloni, Florence, Italy.



Copy. Augustus H. Saint-Gaudens

Figure 2. Sketches for the Shaw Monument by Augustus St. Gaudens.
From "Reminiscences of Augustus St. Gaudens," by
Augusta H. St. Gaudens. Published by
The Century Company, New York.



Copyright by The Macmillan Company.

Figure 3. Study for the Forecourt of St. Peter's by Bernini. From "Bernini and Other Studies in
the History of Art" by Richard Norton. Published by The Macmillan Company.

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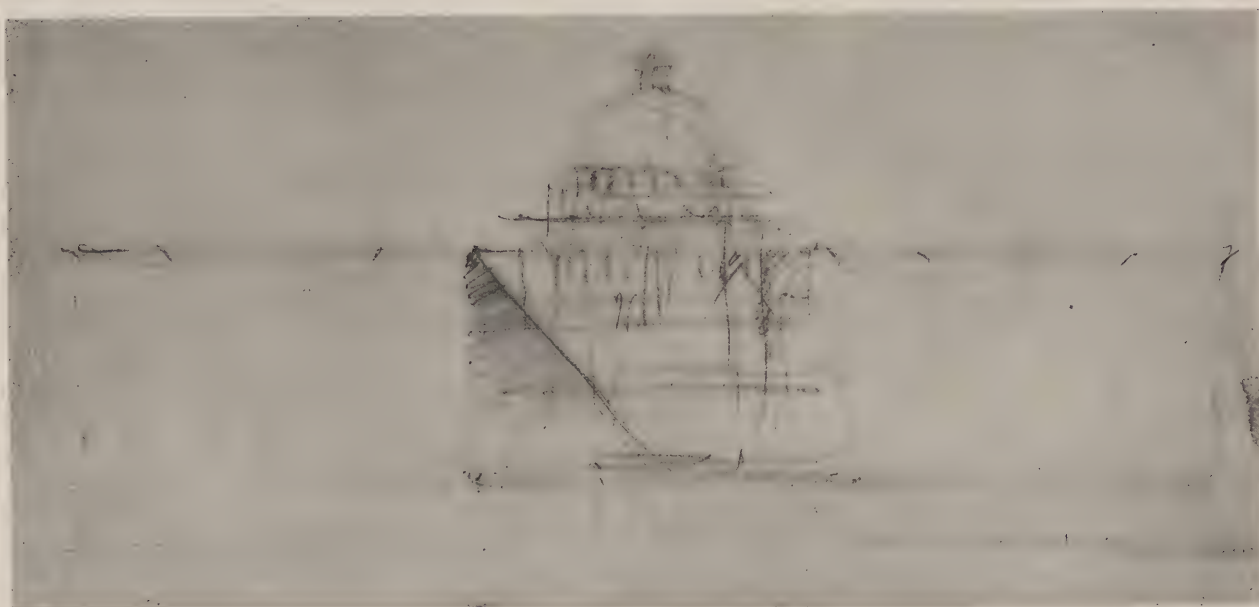


Figure 4. Early Sketch for Bellevue Hospital, New York City, by the late Charles Follen McKim. Reproduced from the original drawing through the Courtesy of McKim, Mead & White.

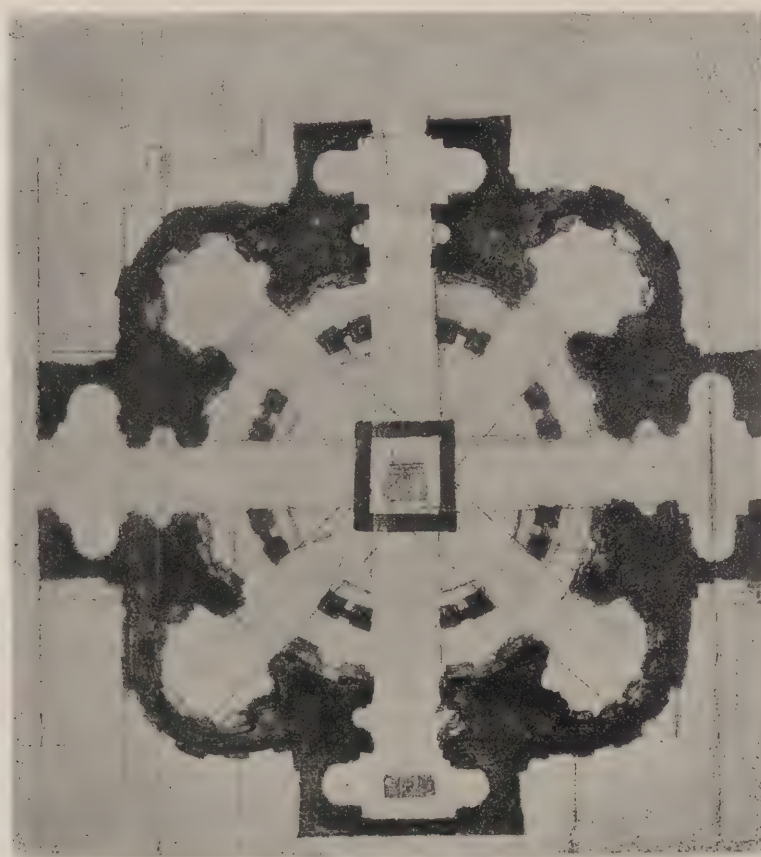


Figure 8. Sketch of Plan for a Church by Michael Angelo. Courtesy of the Metropolitan Museum of Art.

THE TECHNIQUE OF RENDERING, PART III.

BY FRANCIS S. SWALES

In the serial article of which this is the third installment Mr. Swales explains practical methods of rendering. These methods, though based on what may be regarded as standard practice include variants that have been found effective in actual work. In preparing this article Mr. Swales has drawn freely upon the fund of experience he has gained in his architectural work.—ED.

TO THE architectural workman the finely made and conventionally rendered drawing most clearly showing every detail necessary to the total effect of the design means most. It may not necessarily be artistic, but it must be correct. It must conform to high standards of technique. It may lack originality of ideas and may possess only artificial "feeling"; but must not be lacking in knowledge of those conventions which constitute a clear and common means of communication between artist and artisan, or artisan and artisan. Such are the drawings of Classic and Renaissance monuments and details made by the French students, sent to Rome, as holders of the *Grand Prix*, and reproduced in D'Espouy's compilations "*Fragments d'Architecture Antique*," "*Monuments Antiques*," etc. If the drawing communicates ideas and impresses with that spontaneous feeling which charms the eye and mind as well as satisfies the discerning observer, so much the better—the nearer it comes to being a work of art.

It is good training on the part of the student to make very careful drawings of the orders—the simple Roman Doric, at first, at a fairly large scale. Use "Vignola" as a guide (there are plenty worse).

The better editions explain the casting of shadows and for supplementary elucidation use McGoodwin's "Shades and Shadows." When the stage of rendering is reached use the simplest model that can be found—the one that seems to call for the least amount of work. By the time a half-dozen such drawings have been made progressing through the Roman Ionic, Greek Doric and Greek Ionic, but not before, try such representation as the Corinthian capital and base from the Temple at Cori, using illustration of the drawing by Bruné (see Figure 1, Part 1, August number) as a guide. Bear in mind that the original drawing is slightly lighter in tone than the illustration. (Compare the white paper with the "white" of the illustration in order to find how much lighter.) Use light diluted ink for the lines, and pale monotone washes for the renderings.

Color is seldom necessary in such drawings, and monotone is the satisfactory refuge of those who lack a refined sense of color—which is the vast majority of architects and draftsmen, even though they may be highly accomplished in the scholarship and artistry which deals with form. Also, it may be observed, that such sense is not strong in the American people. This is not to contend that the monotone is better than clear color for academic



Figure 15. Competition Design for The New York Public Library. Carrère & Hastings, Architects.

PENCIL POINTS

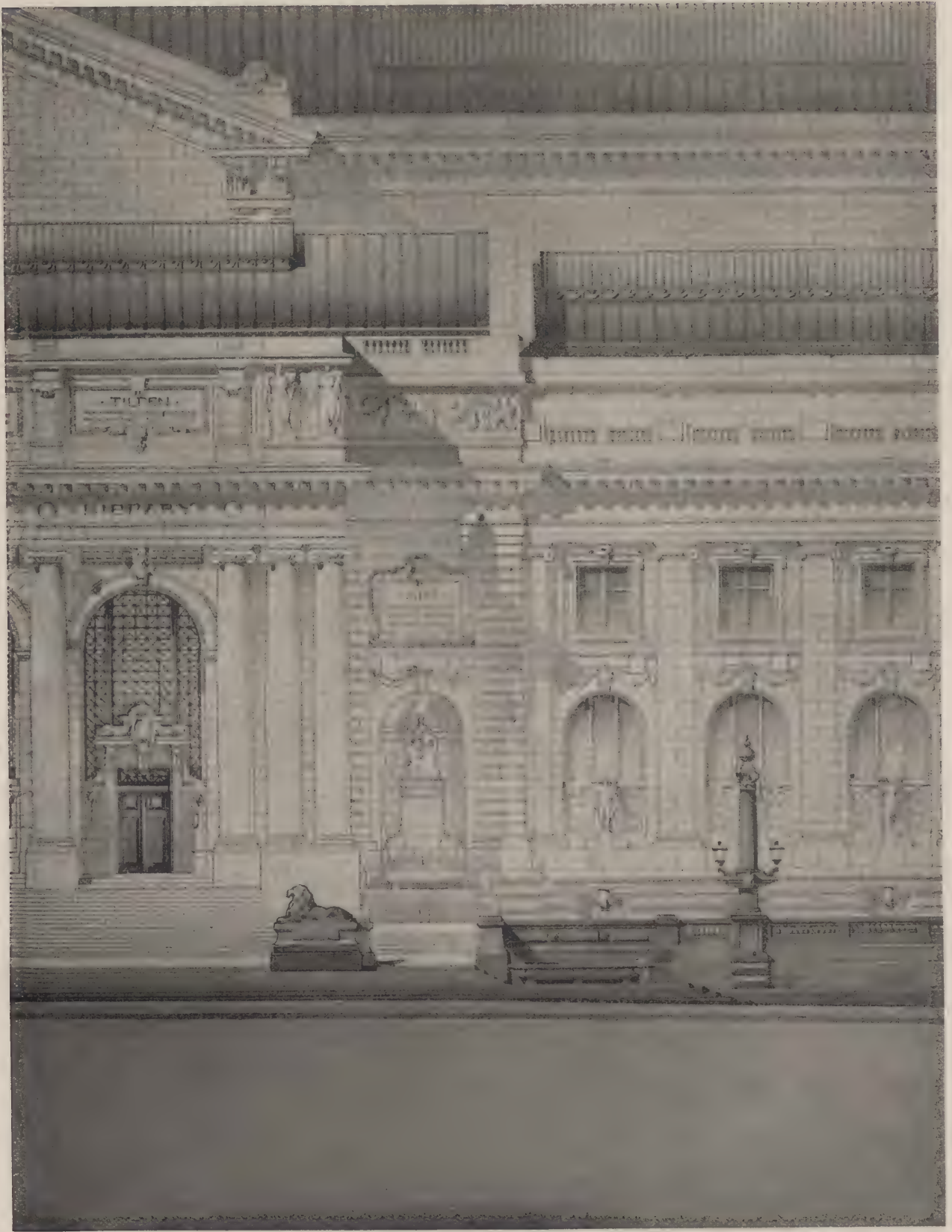


Figure 16. Portion of Competition Design for New York Public Library. Reproduced at Actual Size of Original Drawing. Scale $\frac{1}{8}$ in. = 1 ft. Carrère & Hastings, Architects.

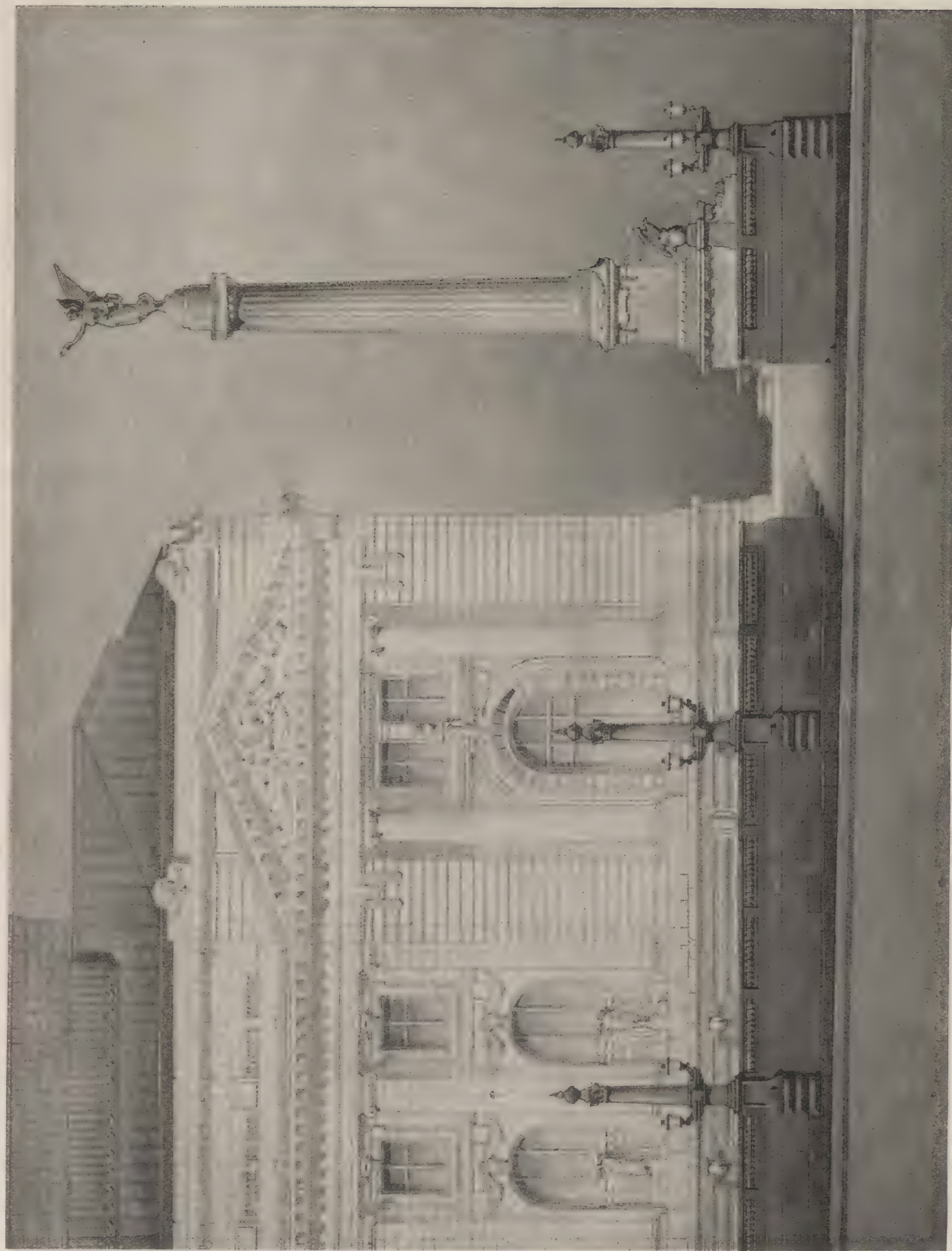


Figure 17. Portion of Competition Design for New York Public Library. Reproduced at Actual Size of Original Drawing.
Scale $\frac{1}{8}$ in. = 1 ft. Carrère & Hastings, Architects.

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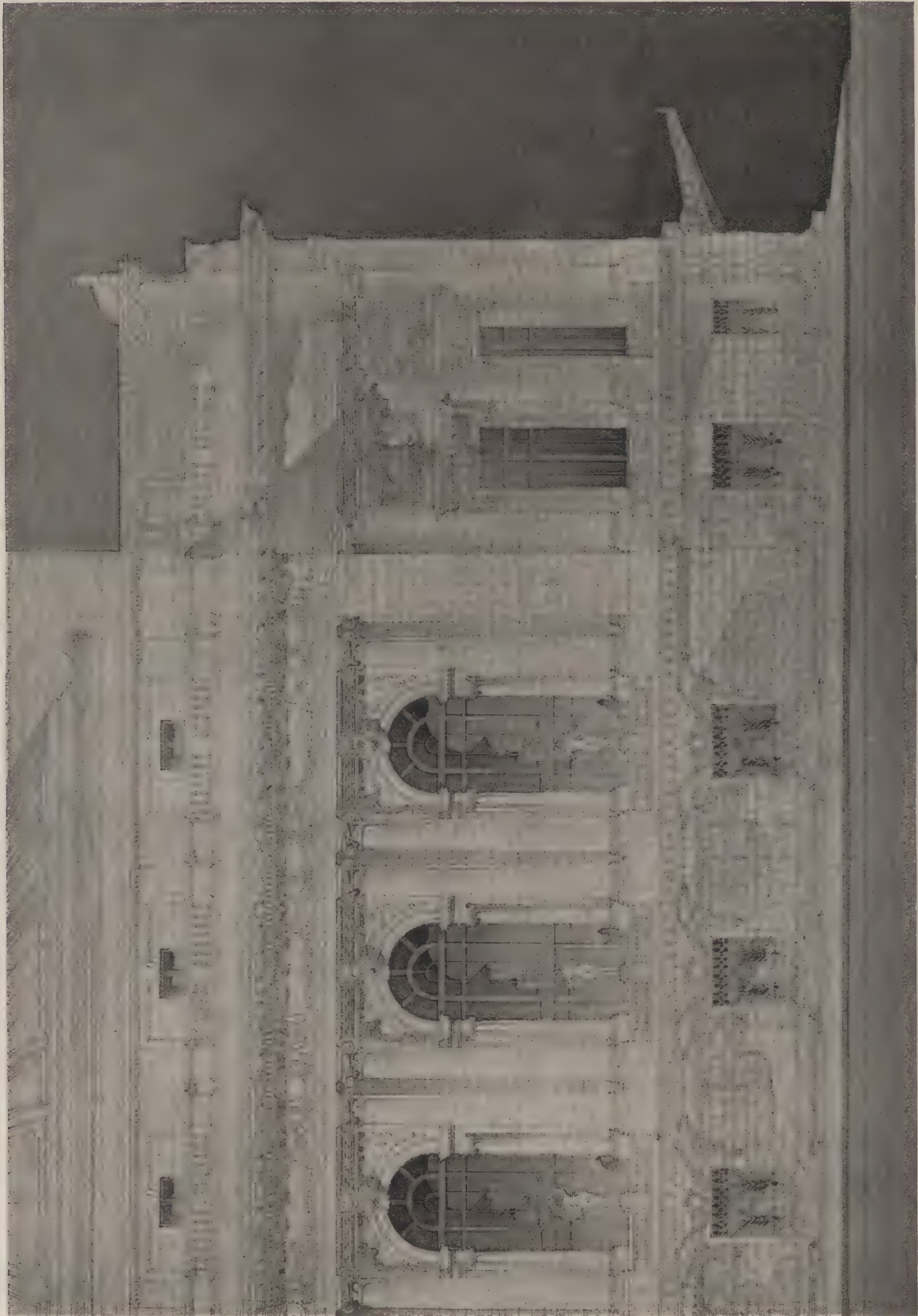


Figure 21. Portion of Competition Design for the New Theatre (Now the Century Theatre), New York City. Reproduced at Actual Size of Original Drawing. Scale $\frac{1}{8}$ in. = 1 ft. Carrère & Hastings, Architects.

PENCIL POINTS

rendering. A study of the magnificent drawings of the restoration of *Selmonte*, by Monsieur J. Hulot, which are in clear color, would refute any such contention. It is merely *easier* to produce a correct effect of modeling and to learn a formula for effective production, if one has but one color to consider. It simplifies matters to eliminate from consideration such problems as are encountered by at-

tempting to approximate nature with representations of foliage, skies, etc. The type of drawing which is confined to what may be termed the mathematics of rendering—which consists of a countable number of washes of single tone as well as but one color—to create atmospheric effect and define the third dimension affords the best training, and in the long run, is the most satisfying to the average student possessed of some scholarship in architecture. It is also the kind that will reproduce most nearly to the original by process of engraving. Color constitutes a study by itself which can be taken up after values in one tone are well understood. Ability to produce good monochrome wash drawings is soon acquired by the student who has learned to draw from the plaster cast.

The rendering of elevations, especially competition drawings, is a subject which most draftsmen desire to take up, at least the men with a real interest in architecture. Usually the process of the



Figure 20. *Competition Design for The New Theatre (Now the Century Theatre), New York City. Carrère & Hastings, Architects.*

and never, as far as I have observed, is at the same scale as the original drawing. Therefore it has been nearly useless as a guide to technique.

The illustrations to this article are a new departure. Figures 15, 18 and 20 illustrate the general effect of three drawings. Figures 16 and 17 are reproductions of portions of Figure 15 at the actual size of the rendering. In this case the original drawing, by Mr. T. E. Blake and Mr. Chester Aldrich, was made at $\frac{1}{8}$ inch scale, then reduced to $\frac{1}{16}$ inch scale by a copper-plate engraving reproduction, printed on a sheet of water color paper and the print rendered in wash by Mr. Aldrich. The drawing is one of the very few really first-class monochrome (so-called "India Ink") wash drawings produced in American practice which is free from such mechanical process work as that of the blower, atomizer and air brush. It is also free from the use of body color, Chinese white, or washes containing it, full strength prepared ink, crayon or

office-trained man is to take as a model the work of the best draftsman in the office, or to use the best plates he can find in the architectural magazines as a guide. How good as standards, and how applicable to the subject with which he is about to deal, such models and guides may be is often difficult for him to determine. The disadvantage of the usual plate is that it is not to any familiar scale,



Figure 18. *Competition Design for State Library, Sacramento, Cal. Francis S. Swales, Architect.*



Figure 19. Portion of Competition Design for State Library, Sacramento, California. Reproduced at Actual Size of Original Drawing. Scale $\frac{1}{8}$ in. = 1 ft. Francis S. Sawales, Architect.

PENCIL POINTS



Figure 22. Record Drawing of Old Porte Cochère, Paris, by M. Charles Montaland. Reproduced from a Large Drawing, the Original Being One-tenth the Size of the Porte Cochère.

PENCIL POINTS

pencil retouching. It would be difficult to find a better example of technical excellence as to both line and wash work, or a drawing showing greater knowledge of the best conventions of academic presentation. To *copy* such a drawing—or portion of it—would afford opportunity for discovery of mistakes of technique. To render a new subject creates the additional chance of mistakes in composition of values. As between poor technique and poor composition of values the former is more easily endured. Before considering the technique it will be interesting to note the composition of color values (Figure 15).

The design was for a building of white marble with a copper roof, and surrounded by a retaining wall and balustrade of pink granite. There were, therefore, three principal horizontal bands of dark or color—the foreground wall, the main roof, and the roof of the reading room in the distance. The darks in the foreground and main roof are of about equal intensity and extent. The dark of the more distant roof is less in both intensity and extent, but mainly it is *lighter* than the darks of the foreground. There are also four principal planes of light: the entrance portico which advances from the main wall, then the main wall of the building; thirdly, the pediment behind the ridge of the main roof, and, fourth, the wall of the reading room in the distance.

Since the darks become lighter and the light planes darker as they recede, the contrast between the principal color masses is greatest in the foreground and least in the most distant parts of the building. On this theory, a very distant wall, roof, or even the atmosphere would become a grey half-tone. Any half-tone in the white walls would be *lighter than the atmospheric* half-tone or background, while any half-tone in the roofs would be darker. The theory determines and answers one of the most important questions which arise in nearly all renderings: "Should the window openings be darker or lighter than the background?" (It should be noted that under any circumstances, in order to give solidity to the building and prevent the windows from appearing as mere holes in a thin wall, they should always be decisively *darker or lighter* than the background of the picture—never the same tone as the background.)

An examination of the technique of the wash-work discovers that a great many light washes were employed. A very light tone was spread over the entire drawing. A second wash covers all parts except a mere line running along the top of the balustrade in the foreground and on the levels of landings of steps. (See Figures 16 and 17.) A third wash covers the whole drawing except the above reserved parts and spares the projecting arcaded, entrance pavilion; a fourth, spares all the above mentioned parts and also spares the columns and is graded to nothing at the plinth course below columns; and so on. The washes are applied one after the other for each successively darker part. In the original India Ink drawing, the foreground does not appear so strong as in the printers' ink reproduction; but the edges of six bands, showing the use of at least six light washes, appear about $\frac{1}{8}$ inch apart

across the full width of the drawing. Points to note about this drawing are the sharp intensifying of shadows of window reveals at their narrowest points and the quick grading-out as they widen. The lighting within the large shadow at the right of the entrance projection (see Figure 16) especially under the main cornice, is to mark the secondary and very slight projection. A point to criticise about this shadow in particular is its illusory character. It does not help in the study of the design. A darker shadow might have called attention to the danger of a projection too great for satisfactory perspective effect in the executed work. But as an example of beautiful presentation and unflagging care it is a drawing that leaves nothing to be desired.

Figure 19 reproduces at the actual size of the original a portion of the drawing of which Figure 18 shows the general effect. It is the familiar American British-derived type of the long façade with the pseudo-classical portico projecting therefrom. The portico is the *clou* of the rendering. To give it the effect of projection a strong wash must be passed over everything behind it. The strength of a single wash on this drawing is about equal to five of the washes used for Figures 15, 16 and 17. Dark washes are, however, more difficult to run than light ones. Their tendency to give hard edges makes the use of *piquage* a necessity. The retouching with Chinese white and dark India Ink while giving sharpness and brilliancy to a drawing which can be read easily by an observer standing four or five feet away—as in the ordinary competition exhibition—must, however, give up the expression of delicacy or charm of detail. Such matters are, however, of relatively small importance compared with those of void and solid in a monumental building. When the voids are large, in order to prevent the solids from appearing too thin, too much contrast must be avoided, and a dark tone of rendering becomes necessary for the wall surface and consequently for the whole building. As a rule a dark treatment of the building requires a strong background and a still stronger foreground. Heaviness and density can be avoided by cooling the background washes with blue and warming the foreground with red or yellow.

When ornamental and delicate detail is essential to the design presented, and the scale of the drawings is small, it may be safely stated that the fewer and lighter the washes, the better. Figure 21 is a reproduction, at the actual size, of the competitive drawing for the Century Theatre, of a masterly piece of line-drawing by Mr. Albert D. Millar. The small reproduction (Figure 20) indicates a fault in the wash rendering of the window openings being too nearly the same value as the atmospheric background, causing the appearance of there being no building behind the façade. Such extreme finesse of line technique admits of but few washes. Otherwise the finely indicated ornament would disappear under repeated washes or would become hard and exaggerated if any attempt were made to spare highlights and indicate shadows. Only two washes, each

(Continued on page 66)



Courtesy of the American-Hellenic Society

TEMPLE OF NIKE APTEROS, ACROPOLIS, ATHENS

Frederick Boissonnas

The plate photograph reproduced on the opposite side of this sheet is one of the finest presentations of the Temple of Nike Apteros, on the Acropolis at Athens. This beautiful temple was built in 435 B. C. After its partial demolition it was found possible to reconstruct it with the original stones.



Courtesy of Kennedy & Co.

RUE DES CHANTRES
FROM AN ETCHING BY CHARLES MERYON

On the other side of this sheet is reproduced one of the series of etchings which Charles Meryon made for the purpose of preserving a record of the Old Paris for which he had a great affection—the Paris that was soon to almost disappear with the “Hausmannizing” of the city. Charles Meryon was born in Paris, November 26, 1821, and died in a madhouse at Charenton in 1868. He was a son of Charles Lewis Meryon, an English physician of note, and Pierre Narcisse Chaspoux, a dancer at the Opera in Paris.



LANDSCAPE FANTASY IN PENCIL BY THEODORE T. DE POSTELS

A delightful bit of expression in pencil is the landscape fantasy by T. de Postels, reproduced, with only slight reduction, on the other side of this sheet. This is one of a number of fantasies materialized by Mr. de Postels as a relief from his longing for his native Russia during the first winter of his residence in this country. These are true fantasies; they express moods and memories and do not represent any particular bit of nature. This drawing epitomizes one type of Siberian landscape, and is remarkable for its sense of space and quiet. These fantasies are especially interesting because of the contrast they present in comparison with his thoroughly architectural renderings of buildings.



Courtesy of Kennedy & Co.

HARFIEUR
FROM AN ETCHING BY D. Y. CAMERON

The etching "Harfleur" reproduced on the other side of this sheet is one of the finest of the many etchings of architectural subjects made by D. Y. Cameron, who is one of the most distinguished of Scottish artists, painter and etcher. Cameron's etchings are very highly prized by collectors for their pictorial and technical excellence as well as by architects for their sympathetic rendering of charming subjects.

DESIGN IN THE DRAFTING ROOM, PART I

BY JOHN C. BREIBY

This is the first installment of a new article in which Mr. Breiby goes back of the subject "The Making of Working Drawings," which he has treated in recent issues, and discusses the preliminary study that precedes the beginning of the working drawings. Mr. Breiby is a member of the organization of Carrère & Hastings, Shreve, Lamb & Blake.—ED.

FREQUENTLY the architect is asked this question: "How do you plan and design?"

The question is simple enough, but the answer is far from being simple. Perhaps the only answer can be, "by clear thinking and self-governed expression of the imagination."

In using the term design, the study and working out of plan and elevation is to be understood collectively. Designing is somewhat apart or foreign to that which is theoretical or experimental, for the fixed basic laws guiding human life, habits or modes of living are the prime factors from which the architect has to build up his work. As the individual is clothed with suitable garments of usefulness and adornment, likewise, society must be clothed. A family is clothed by the home; a congregation has, as its covering garment, a particular church building; our laws compel the provision of necessary covering and protection for the children, by the erection and upkeep of our public school buildings. Institutions, office buildings, buildings of state, industrial structures—in short, all buildings wherein society assembles for any purpose—are all covering garments of usefulness and adorn-

ment, which form one of the principal fundamental pillars of civilization.

The work of the architect is to clothe and array society by designing and guiding the erection of buildings. The burden which the architect must carry is heavy; his responsibilities are many; his mind and body must always be ready to undertake a severe task; his joy must be in the knowledge that the work must be done well.

It must be remembered that public congestion, confusion, and at times even accidents or panics with resulting loss of life may be caused by a faulty plan, and in such an event the architect is guilty.

The action of the elements, such as fire or storm (unless such are calamities, generally termed as "Acts of God") must be foreseen and guarded against by the architect. Truly enough many building ordinances have been formulated and are enforced to insure public safety of buildings, and able specialists have given rules and formulas for the strength of materials used in building construction, which all, of course, assist the architect to safeguard his work. The architect must, of course, be governed by the building ordinances—where such



Figure 3. Study for Residence at Cold Spring, N. Y. E. V. Meeks, Architect.

PENCIL POINTS



Figure 4. Sketch of Mausoleum. Theodore E. Blake, Architect.

PENCIL POINTS



Figure 2. Sketch of Camp for J. R. Harbeck, Esq., Upper Saranac Lake, N. Y.
Carrère & Hastings, Architects.

are in force—and work within the factors of safety set down for the strength of material; but he must even go beyond such regulations, if necessary, to make his work successful and pleasing. In localities where no building ordinances are in force or where they are of an indifferent kind, it is up to the architect to guard his own work well. It might be said, whether or not ordinances are in force, that for the proper design and erection of the executed work, the architect is the administrator of the law, according to his own conscience.

As the endeavor of this article is to outline the work of design, and especially design in the drafting room, the work, of what is known as the practical side, will be considered only as it affects design. In this sense the word practical, is misleading for all design must be practical, to be successful.

In the foregoing paragraphs it has been set forth, what the work of the architect is, and what his responsibilities are—too much stress cannot be laid thereon. To repeat, the work of the architect—which, of course, includes that of all his assistants, such as designers, draftsmen, engineers, etc.—is to understand the desires and requirements of those by whom he is commissioned to work. It is most important, however, for these desires and requirements to be known and understood by those whose task it is to prepare the original scheme or design.

When a problem concerning the erection of a building is given to the architect for solution, he must live the life of the person or persons by whom he is engaged and must live in the very structure which he purposes to erect. In designing a theatre, the architect must have the manager's view-

point. He must see the audience from the stage, as the actor sees it. He must see the actor from the house, as a part of the audience, and so on, for every problem he undertakes. The life of the banker, the railroad official, the dweller in the cottage, is all the life of the designer, according to the problem to be solved.

Good architecture is the result of good design. The particular architectural style period or character which is considered best to be guided by, is a matter of absolute personal feeling. The designer, however, must work according to the character of the building and feel the spirit of the work.

The accepted general laws of mass, proportion, scale, color, etc., are traditional results of that which is good and pleasing to see. It is well to abide by such laws; to depart therefrom is to play with fire. It is quite safe to say, that if an entirely new type of architecture is to be brought to life, this cannot be done "overnight," nor can the individual depart from traditional effects, and burst out with an expression of, "I have it." Traditions do change, as time goes on, with the humor of the people. Changes are gradual and progressive, and must be so to live.

An example of the change and development of present day architecture has been seen in the progress of design in the modern "skyscraper." As the occasion or popular demand arises, characteristic and good architecture will be ready to meet the call, and the result will be good.

To return to the subject of design in the drafting room. Study, good books, and free use of the pencil are the three important requisites. Study

PENCIL POINTS

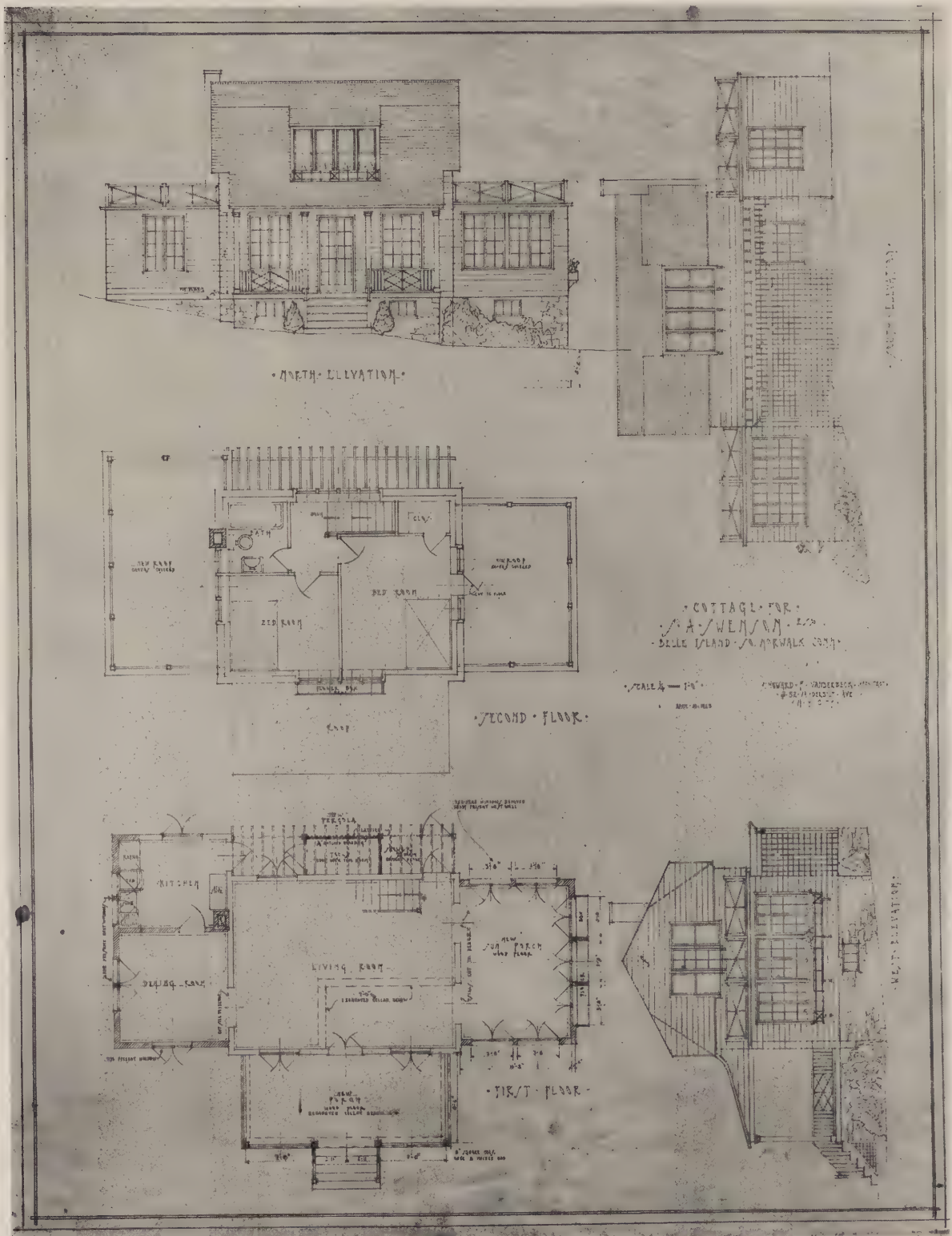


Figure 5. Cottage for S. A. Swenson, Esq., at Belle Island, South Norwalk, Conn.
Howard F. Vanderbeck, Architect.

PENCIL POINTS

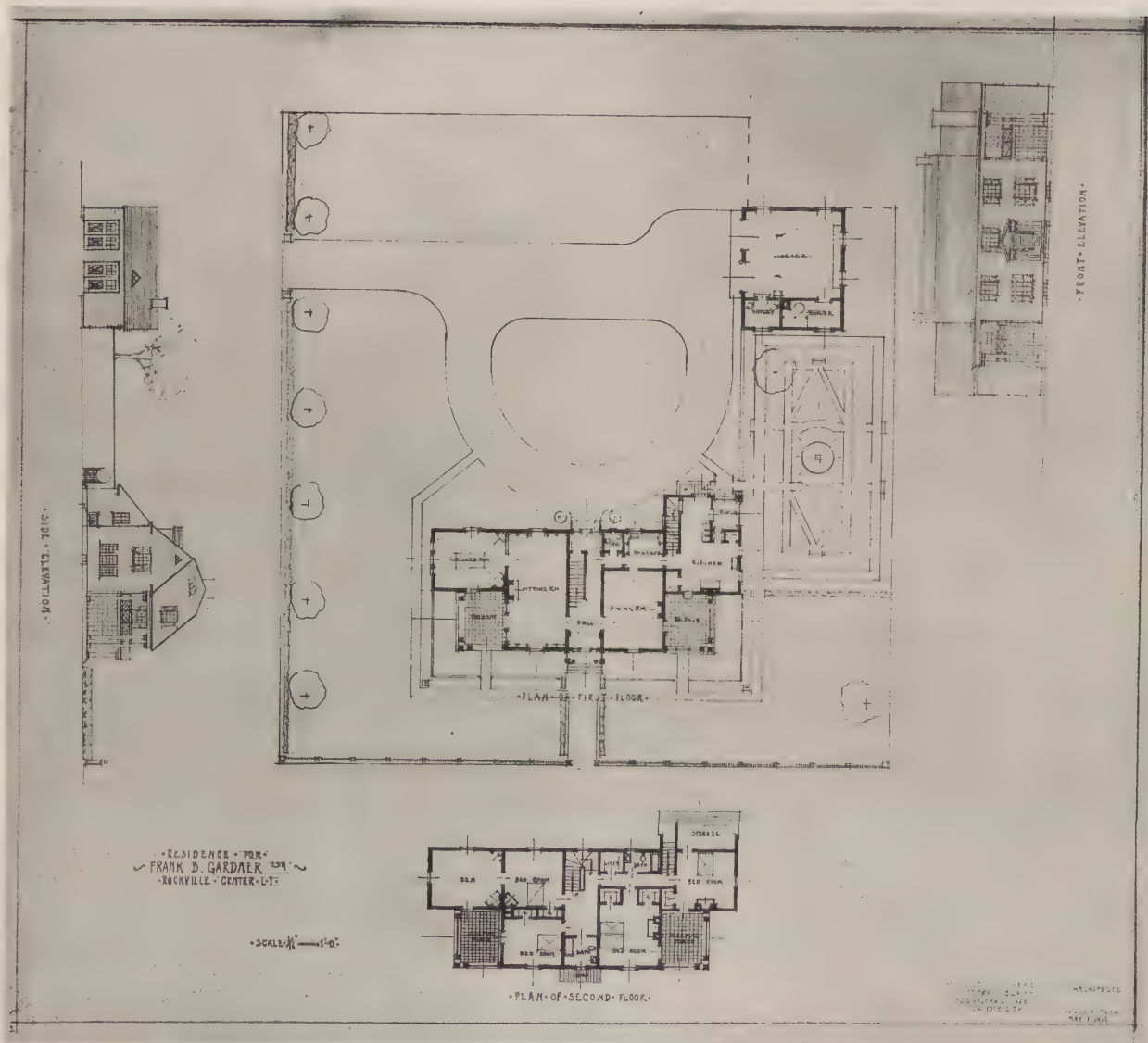


Figure 1. Residence for Frank B. Gardner, Esq., Rockville Center, L. I. Everett V. Meeks and Theodore B. Blake, Associate Architects.

every problem. Search its meaning. Live its life according to the requirements thereof. Look at books and plates. Good books are the storehouse of plenty—let the “pictures” therein imprint themselves upon the mind, thus providing an ever ready encyclopedia of mass, motif and detail. Free use of the pencil is the draftsman’s violin bow. Use it with the certainty of strength or with the touch of delicacy. Make every line therefrom count. All of what has been said is old, and has often been told.

Design in the drafting room does, in a measure, differ somewhat from design as studied and developed by the many excellent architectural courses at universities and schools. It will not be necessary to mention the value of such academic training, nor to call to mind any particular method of study by the student. Perhaps the very difference

between the design of the drafting room and design of the school, can be better expressed in saying, that after the architectural school student enters into the actual practical working ways of the architect’s business office (it is a business and an exacting one), the work is measured in terms of dollars and cents. The *Programs* and *Problems* become stern realities; “Points of Poché” become actual pillars of stone and brick, costing—in money—so much, or so much. This must not be taken, however, to mean that the practical and working design of the drafting room is only to be measured by scales of cost. The work is delightful and the student becomes not only a better student, but also an expert specialized workman.

The drawings illustrated herewith are what can be called “pencil study sketches.”

(Continued on page 66)

ARCHITECTURAL SUPERINTENDENTS MANUAL

BY FRANKLIN J. WARD

THIS is not an encyclopedia of building. It is just a little booklet to assist the young superintendent, who is generally taken from the drafting room. A few years' experience will teach him what many before him have learned. In the meantime, a little advice may help. There will always be more to learn, but most problems are solved on principles which should be learned early in the work.

Parties Concerned

The *Owner* spends the money. He is entitled to a fair equivalent for it.

The *Contractor* does the work. He is entitled to a fair payment.

The *Architect* is employed and paid by the owner, and yet he is expected to see that both sides get fair treatment. He is in a difficult position, and the high respect paid to the profession is testimony to the general high quality of architects.

The architect's *Superintendent* is the employee and representative of the architect. (See that you represent him honorably.) He may have full detailed instructions, or he may be allowed to run the work as he will. As an employee of the architect, he stands between the owner and the contractor, and frequently the smooth running of the job and the satisfaction of all concerned depend on the superintendent's tact and ability. His work is principally to inspect the work, and see that the plans, specifications and instructions are properly and honestly carried out. Sometimes he can assist in planning ahead and seeing that coming work is taken care of.

Sometimes a *Clerk of the Works* is employed. He is simply a superintendent spending all his time on one job, and consequently able to attend to it in more detail. His salary is usually paid by the owner, through the architect. Frequently a beginner is made clerk of the works, and an experienced superintendent visits the work occasionally.

If a *Consulting Engineer* is employed, his standing is that of a representative of the architect in his particular field.

The General Contractor's representative at the work is sometimes called the *Foreman*, but more often *Superintendent*. He may have full authority, attending to planning the work, employing labor, ordering materials, and bossing subcontractors, or he may be little more than a clerk, while the contractor does most of the head work in his office.

To call both the architect's and the contractor's man "superintendent" is confusing, but it is done, nevertheless. In what follows, the references are to the architect's superintendent unless otherwise noted.

Each important trade will probably have a *Foreman* who will be his employer's representative for that trade.

An *Inspector* is one who inspects the work, or some part of it, to see if it meets the requirements, but without any thought of planning ahead, and frequently without regard to price. Inspectors are frequently thought of as a nuisance, as they are generally considered critical rather than helpful; but it must be remembered that that is what they are employed for, and that if all engaged in building were honest and competent, inspectors would hardly be necessary. If the superintendent will treat inspectors with fairness and respect, he will generally find that they give him little trouble, and will often go out of their way to help him.

General Conduct

No one knows everything. The superintendent is frequently asked to decide questions about which he knows little or nothing. Usually appearance is in question, frequently construction is involved. It may be the position of some outlet, whether a pipe should be concealed or exposed, or some similar question. Usually the workmen can state the construction requirements, or the customary way of doing the work, but a workman usually sees only the work of his own trade, and the requirements of other trades and the appearance hardly appeal to him. Frequently the superintendent is puzzled to decide what should be done, and unfortunately few rules can be made to help him except to use a large amount of common sense.

One good rule to remember is "Safety First." That is, do not take chances with the strength of materials, or pipes freezing, or wires crossing, or flues touching woodwork, or similar forces of nature; for if this kind of mistake comes back on you, everybody, particularly the owner, will blame you, and you will get little consideration for the excuse that you were trying to improve the appearance, or save money.

In considering appearance, try to remember that you are only the superintendent, and try to make the appearance as the architect would have it, rather than according to your own ideas.

Sometimes, unfortunately, it is necessary to reject work. Most of us do not like to do it, especially after it is in place. Be as fair as you can, but remember that the owner should get what he has contracted for. Remember that the builder can appeal to the architect if he does not like your decision. In fact, it is sometimes advisable to ask him to appeal, for you will then lose less respect if you are overruled, and win more if you are not.

Be careful in expressing opinions to the owner, whether of construction, appearance, cost, or anything else. Unless you are sure it is so and approved by your employer, state it clearly as your personal opinion, based on such information as you have, but if more accuracy is wanted, you will ask the office to investigate and report.

PENCIL POINTS

Sometimes you will hear the owner or the contractor criticise the design, the construction, or even the architect himself. If circumstances seem to warrant repeating this to the architect, do so. But if not, do not repeat it to anyone else.

Many trade rules and customs have grown up. They will be quickly called to your attention if you try to violate them. Some of them may seem wrong. Nevertheless, try as far as possible not to violate them, for they are the fences which have been built to make building an orderly affair instead of a chaos, and they must be respected until better rules are made, unless one is ready for trouble.

As a general rule, the architect cannot recognize Union Labor as such, for his function is to get the work done properly, and the builder has to look out for who does it. So be very careful about interfering in labor disputes, and only do so when there is something at stake which will affect the owner's interests.

Always be ready to listen to information and advice from all workmen. They have learned many things you have not. But in giving orders, talk direct to the foreman or superintendent, or if compelled to direct the men, tell the foreman of it at the first opportunity. Firstly, it is the foreman's right to get directions, and secondly it holds the respect of the men under him and so makes the work go better.

Do not express criticism of the men, particularly to their foreman or employer, until you are ready to follow it to the end. It is almost certain to get back to the man, who will probably make things unpleasant for you.

Be as pleasant as possible in your dealings. A grouch or brute is never liked. You will sometime need all the friends you can make, and unkind conduct does not make friends. But do not be too familiar, or you will lose the respect of the men, which you need.

Watch your step when you take anything from the builder or his men. There are a few recognized perquisites, like cigars or an occasional dinner, which generally seem to be understood as fair and harmless. These can generally be classed as of a temporary nature. But anything in the nature of a permanent gift is classed as graft, and while there are some who go deeply into graft, you may be sure, even if the motive of honesty does not control, that in the end a fair return is expected for all gifts, and no grafter has permanently prospered.

The builder is generally very careless with the drawings and specifications. The superintendent should make an effort to have them filed as orderly and systematically as possible. They should be kept up to date, and superseded ones should be marked *void* or destroyed. It will save trouble, for they will be more consulted if they are orderly and reachable, and fewer explanations and corrections will be needed. Of course the superintendent should himself know them as thoroughly as possible.

It is well to have one complete contract set separately kept intact for comparison against changes.

Records

The superintendent should keep some sort of a record of progress of the work. It may vary from a few notes in a diary to a complete daily report giving all details. But enough should be noted to be able to show, if a question should arise at some future time, "That is the state of the job at that date, and this written note confirms it." Frequently the architect or owner requires periodical reports. Particular points to be noted are:

Start and finish and interruptions of each principal trade. To this may be added, in more or less detail, what part of the building each trade is working in, and the state of each trade's work, or its percentage finished.

The weather, particularly if there may be claims for delay on this account.

Any fact which might cause delay to part or whole of the work, particularly if there is a time limit, whether it is something the owner or architect did or did not do, or some act of one trade which would cause delay in another trade.

Any fact about work which cannot be seen by a later inspection, or which might be questioned later, as that drains were put in, or chimneys or pipes tested, or anchors built in, etc.

Financial

The superintendent will frequently have to consider the cost of the work, even if it is only to report to the architect for his judgment. Extreme care must be used not to do or approve anything that will cause an extra without knowing where the money to pay for it will come from. A contract is usually for a definite amount of work, and whether for a fixed price or on a cost plus fee or commission basis, any work added will cost more, and the owner will usually want to know why. It is better to let changes be handled entirely by the architect's office, but if circumstances are such that a change is necessary and the superintendent must order it on the spot, he should either order it verbally (if the contractor will take a verbal order) and as soon as possible report it to the architect for confirmation, or he should give the contractor a written order somewhat as follows, sending a copy to the architect:

Re: Mr. Smith's Residence:

Mr. John Doe: You are hereby directed to put an additional drain at the south side of the house, the additional cost of this work to be reported to the architect as soon as completed.

William Roe, sup't.

If the work was required by the owner, as often happens, it is well to mention the fact in the order, and if an estimate is required as soon as possible, in the meantime going ahead with the work, the order should so state. If an estimate is required before starting the work at all, the matter is usually handled by the office, and all the superintendent has to do is to ask the contractor to send an estimate.

There is often much trouble from the owner giving orders direct to the contractor to do work, fre-

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quently without even asking if it will cost more. Unless the superintendent has full authority from the architect, he had best not meddle with these orders, but ask the contractor to report them to the architect immediately. Everybody—architect, superintendent, and contractor—should use all the diplomacy they can to induce the owner to give his orders through the architect, as that is the only way to keep accounts straight, and usually the owners who are most careless in asking that extra work be done are the very ones who complain most when they have to pay for it.

The superintendent will usually have to check or approve the applications of the contractor for payment. If the contract is for a fixed sum, it is advisable to ask the contractor at the beginning of the work for a division of his contract (usually by trades) with the amount allowed for each, and it is then much easier to estimate the percentage of work done in each trade, and thus get the total amount of work done and money due. The contract will state what percentage of work done is to be paid for in each payment.

The contract, however, does not always define what work should be paid for in these progress payments. Of course material erected in place should be, and as a general rule, material delivered at the site, but not yet erected, should be paid for as material, especially if it is usable only in that one place, as for instance, cut stone. If, however, it is material like pipe which might be delivered and collected on and then removed for use elsewhere, the superintendent should use judgment, or require a Bill of Sale if he thinks it necessary. Material still in the shop should not be paid for unless a Bill of Sale is given, as is sometimes done when the material is valuable or delivery delayed. A Bill of Sale looks about as follows:

"Know All Men by These Presents That I, Jn. Jones, of Smithville, for and in consideration of \$100, the receipt whereof is hereby acknowledged, have bargained and sold, and by these presents do grant and convey unto John Doe, of 1 Broadway, N. Y., his executors, administrators and assigns, *One Thousand Brick* for the Residence of John Smith.

"To Have and to Hold the same unto the said John Doe, his executors, administrators and assigns forever. And I do for myself, my heirs, executors and administrators, covenant and agree to and with the said John Doe to warrant and defend the sale of the aforesaid brick against all other persons whomsoever.

John Jones."

When the contract is on the basis of Cost plus a Fee or Percentage, the contract should state just what charges are to be included in the Cost, but if it does not, the following definition has been used for several years, and has not yet been questioned:

"The Cost of the work is to include the cost of all labor, materials, transportation, supervision, tools, insurance, traveling expenses, and all other expenses of completing the work, but not to include any charges for home office force or work in the office, or for supervision by members of the firm.

Temporary equipment to be furnished at a price or rental, and proper rebate included for salvage thereon, as approved by the Architect."

In checking bills of cost presented by the contractor, the superintendent may find it a long and difficult task to check them properly, and no rules can be formulated, except to say that he has a right to require the bills to be in a form that will show that the expense has actually been incurred, and for that particular job; and there are no duplications. Vouchers, receipted bills, or affidavits may be presented. Unfortunately there is not even a uniform method of presenting costs. One contractor for instance may charge a flat rate of so much per day for carpenters, and another may charge it something in the following form:

Carpenter's time	\$10.00
Compensation insurance 10%	1.00
	<hr/>
	\$11.00
Overhead 10%	1.10
	<hr/>
	\$12.10
Profit 10%	1.21
	<hr/>
Total	\$13.31

And sometimes the two forms may even appear on different parts of the same bill. Therefore much common sense must govern, rather than any definite rules. Remember also that all business is carried on largely on faith, and building is no exception, and if the bills are presented in such a way as to show there are no mistakes in them, the contractor should not be suspected of cheating unless there is some reason for it.

Occasionally, on cost plus work, it is necessary for the superintendent to watch and note the work done, material delivered, or time of men working, in order to be able to check the bills when presented.

Credits and extras submitted by the contractor are very difficult to check fairly. Almost always the owner, and frequently the architect also, think the credits are lower and the extras higher than they should be, or than they would be if outside competition could be had, and yet most of the time the contractor can and will show good reason for his figures. The contractor has the contract, and therefore the only thing that can be done, if the architect is convinced that the price is unfair, is to use all the persuasion possible, even to the threat of barring him from further work with that office. If the dissatisfaction is too great, the change may be abandoned, and the original contract carried out, or the change may be postponed until the contract is done, and another contractor can be employed.

There is perhaps no generally recognized principle of what makes a fair charge for changes, but the superintendent cannot go far wrong if he lays down the principles that extras should include all costs including overhead, and then 10% profit, and credits should be for the estimated net cost, allowing the contractor to keep his estimated profit, and

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RESULTS IN SANTA BARBARA SMALL HOUSE COMPETITION

THE following awards have been made in the Competition for the Best Design of a House to Cost Not More Than \$5,000 conducted by the Community Arts Association of Santa Barbara, California: First Prize, \$500, to Walter L. Moody; Second Prize, \$200, to A. McSweeney; Third Prize, \$200, to Leffler B. Miller. Honorable Mention with money prizes of \$20 each were awarded to the following: Harrison Clarke, H. G. Lewis, H. S. Richmond, Everett R. Harman, L. Gail McCully. Honorable Mention without money prize was awarded to the following: Messrs. Murphy and Cullity, Frederick A. Eastman, Ted. Fletcher, Leffler B. Miller, Lee F. Fuller. *Hors de concours*, Leffler B. Miller.

In addition to the above awards by the Jury, a number of other meritorious designs were recognized by the award of a special mention by the Community Arts Association to the following: Geo. C. Anderson, Calvin M. Butler, K. D. Church, Rose Connor, R. H. Crawford, J. R. Daniels, M. M. DeAhna, Randall A. Duell, C. W. Lemmon, A. McSweeney, J. V. Mackay, A. D. Roberts, John E. Weaver, Paul R. Williams, W. Ray Winegar.

The Community Arts Association, interested in enhancing the attractiveness of the city, inaugurated this competition through its Plans Division. The competition was under the supervision of the Library and Exhibit Committee of the Association. Mr. Carleton Monroe Winslow, architect, Los Angeles, acted as consultant. The Los Angeles Architectural Club, through its President, Mr. Clifford A. Truesdell, Jr., appointed the three professional Judges, who were required to be members of the American Institute of Architects. These appointees were: Mr. Pierpont Davis, Mr. Sumner Spaulding, and Mr. Jesse Stanton. The two lay Judges were: Mrs. George Washington Smith, of Montecito, and Mr. Daniel Kirkhuff of Santa Barbara. The competition was open to anyone. Drawings were submitted anonymously.

After the awards were made, an exhibition of the designs was held at the Paseo de la Guerra, 21 East de la Guerra Street, Santa Barbara. The exhibition was open to the general public September 15-22, inclusive, and a gratifying degree of interest was manifested by the public. The report of the competition has been issued in the form of a brochure illustrated with reproductions of

the designs which won the first three prizes. These designs are attractive and interesting and the association and all connected with the competition are to be commended not only for the worthiness of its purpose but as well for the admirable way in which it has been carried through.

BEAUX-ARTS BALL

THE fifth costume ball given by the Society of Beaux-Arts Architects will be held at the Hotel Astor, New York, on February eighth.

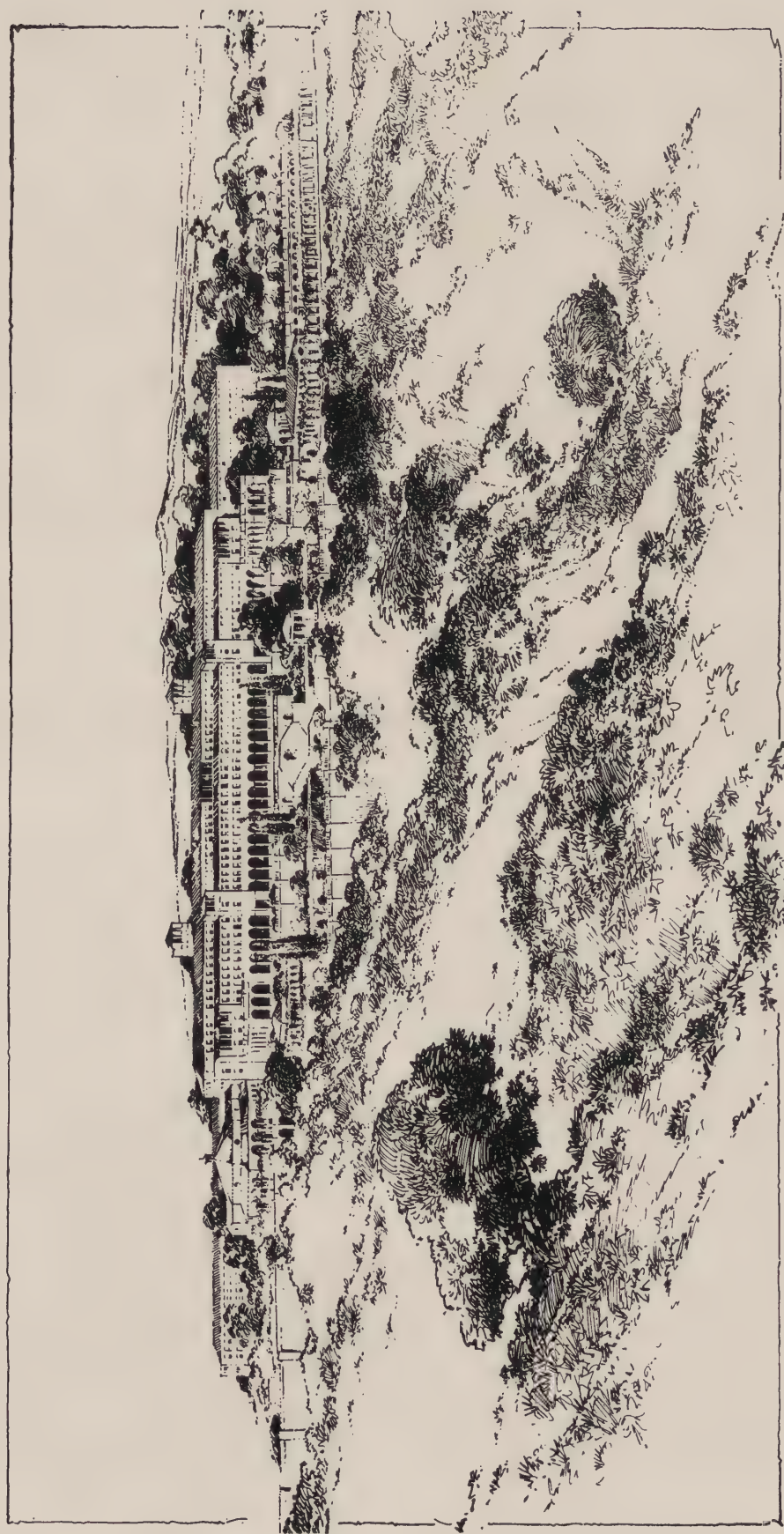
The proceeds of the ball are used to help along the educational work of the society, which includes the Paris Prize given annually to the student winning the competition and the work in ateliers and universities throughout the country where the program of projects issued by the Beaux-Arts Institute of design is used.

The ball of the Society of Beaux-Arts Architects has always been a most notable event, of great artistic significance as well as social importance. It has always called forth the earnest and most unselfish efforts of many of the ablest men in the profession, who have given much time and thought to its preparation.

For the coming event, Mr. Whitney Warren is the honorary chairman of the ball committee and the members of the committee include Messrs. Kenneth M. Murchison, chairman; Donn Barber, W. Lawrence Bottomley, Robert W. Chandler, George S. Chappell, Frank Crowninshield, Bradley Delehanty, C. B. Falls, Howard Greenley, Ben Ali Haggin, J. Monroe Hewlett, Raymond M. Hood, Harry Allan Jacobs, Leo Lentelli, James W. O'Connor, Ronald H. Pearce, John E. Sheridan and Ferruccio Vitale.

Below is reproduced at reduced size, a wash drawing by Theodore de Postels which is a tour de force in simulating photographic quality in architectural rendering.





A Pen-and-ink Drawing by R. J. Lockwood.

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THEODORE T. DE POSTELS

THEODORE T. DE POSTELS, one of whose drawings appears on the cover and who is represented by other drawings in this issue is making his home in New York where he is practicing as a delineator specializing in the making of renderings of architectural designs, work for which his natural ability and previous training have well fitted him. Mr. De Postels, a descendant of an old French family, was born in Petrograd, Russia, where he distinguished himself as an architect and professor of architecture.

Mr. De Postels received his higher education at the Imperial Academy of Fine Arts in Petrograd, graduating as architect-artist. The high standard and spirit of that institution and the influence of its professors, especially of the president L. N. Benois, laid a sound foundation for Mr. De Postels' work.

He spent some years in the office of L. N. Benois, who occupied a distinguished position as architect of the Imperial Court, and Mr. De Postels collaborated with him on the projects for many important buildings, including the Orthodox Cathedral in Warsaw.

Later Mr. De Postels became recognized as one of the most important architects of the Russian capital and built himself a home in the residential section of the Imperial Parks. He was Vice-President of the Society of Architectural Knowledge and a member of several important clubs. He also was in the service of the Imperial Court and of other institutions of the government.

He has travelled extensively in his own country, made nine tours of western Europe including Italy, France and England. He first visited the United States in 1900. He made two later trips from coast to coast and made prolonged visits to California and Florida.

In 1918 Mr. De Postels went to the South of Russia, the Crimea and the Caucasus, where he studied local conditions and the possibilities of the development of garden cities and health resorts. The promising activities in this direction had to be abandoned because of the political

situation. On his way West he passed through Constantinople where he met an opportunity to plan the layout of a new large section of the city, but this project also had to be temporarily given up because of the instability of conditions in the Near East. After a stay in Switzerland he came to New York.

SAN FRANCISCO ARCHITECTURAL CLUB

THE Twenty-first Anniversary Banquet of the San Francisco Architectural Club held in the Plantation Room of the Palais Royal on Friday, September 28th, was a great success, and one of the most pleasant and enjoyable of any event sponsored by the Club in recent years. It demonstrated that the Club, which suffered a setback during the late war, is again coming into its rightful place among the professional clubs of San Francisco.

The banquet, which was given in honor of the Charter Members, was attended by 70 or more. The Charter Members present were August G. Headman, Arthur E. Bugbee, Harry E. Nye, P. Brouchoud, George Wagner, Arthur T. Ehrenpfort, and John H. Ahnden. Those Charter Members who sent regrets were H. M. Smitten, F. A. Farnkopf, A. O. Johnson, Albin R. Johnson, E. G. Bolles and H. G. Corwin. The Honorary Members attending, who were also invited guests, were: John Bakewell, Jr., Arthur Brown, Jr., and Clarence Weed. Those Honorary Members who were unable to attend and sent regrets were George W. Kelham, and John Reid, Jr.

President Mark T. Jorgensen, after offering a toast to the guests of the evening, introduced Mr. Headman, who acted as spokesman for the Charter Members. In reviewing the early history of the Club, Mr. Headman sprung a surprise on all by producing a record book containing the original minutes of the first meeting of the San Francisco Architectural Club in the handwriting of George Wagner, then acting Secretary, which was held on September 28, 1901. As Mr. Headman pointed out this so-called 21st Anniversary Banquet was in fact a 22nd Anniversary Banquet. These minutes were presumed to have been destroyed in the fire of 1906, but were only found by Norman Mohr, Secretary at that time, two days previous to the banquet among some old papers which he had saved from his office during that great conflagration. Interesting talks were made by Arthur Bugbee, Harry Nye, George Wagner, A. T. Ehrenpfort, John Bakewell, Arthur Brown, Clarence Ward, P. Brouchoud, John H. Ahnden, and a number of past presidents of the Club.

Edward L. Frick and Ernest Weihe, patrons of the Atelier, spoke of the progress now being made in that class, and displayed much enthusiasm for its future. It was when Mr. Weihe suggested that it would be an excellent thing if the Pacific Coast Scholarship could be revived, that things took a turn which was entirely unexpected, but which added greatly to the enthusiasm of all. Mr. Ward immediately arose and started such a fund with a very liberal contribution himself. The response was instantaneous, and contributions came so quickly that the Secretary experienced difficulty in keeping account of them. In a brief time over \$1,600 was subscribed. President Jorgensen then appointed a committee of five consisting of Clarence Ward, George Wagner, August Headman, John Bakewell, Jr., and Arthur Brown, Jr., to work out further necessary details in connection with the Scholarship which will be given at the close of the 1923-24 Atelier Season. Those contributing were as follows: Clarence Ward, George Wagner, August Headman, John Bakewell, Jr., Arthur Brown, Jr., J. F. Cronin, Arthur S. Bugbee, T. L. Pfeuger, A. R. Williams, Fred Kramer, Oscar Mohr, Lloyd Cole, James S. Cole, Edward Flanders, A. A. Voisin, H. Villalon, W. G. Pigeon, Ernest Weihe, W. Dunnivant, Wm. Watson, F. L. Frick, Harry E. Nye, Mark T. Jorgensen, H. Michaelson, W. Klahn, Fred Munk, Jr., Wm. Dreusike, Felis Raynaud, Chris Mueller, A. Chapman, Geo. W. Kelham, Wm. B. Faville, and Edward Eames.

(Continued on page 55)



House on the Rue d. Bse

Evening



House on the Rue d. Bse

Evening

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SAN FRANCISCO ARCHITECTURAL CLUB

(Continued from page 53)

An artistic souvenir menu designed by Edward Eames and contributed by the Standard Blue Print Company through J. F. Cronin was placed at each plate. The Charter Members were each presented with neatly engraved certificates of Honorary Membership and a key to the Club. Among the toasts offered by Mr. Headman was one in honor of those Charter Members who have passed away. The success of the affair was due to the untiring efforts and zeal of Wilton Smith, Chairman of the Entertainment Committee, and Mark T. Jorgensen, President of the Club.

The Charter Members of the Club are A. O. Johnson, August G. Headman, H. M. Smitten, George Wagner, H. G. Corwin, M. A. Sheldon, P. Brouchoud, H. E. Nye, F. J. Reinhardt, Wm. B. Betts, Arthur S. Bugbee, J. H. Ahnden, A. R. Johnson, F. A. Farnkopf, A. T. Ehrenpfort, E. G. Bolles, Fred C. Lebenbaum, T. Bearwald, and E. B. Scott. The two last named are deceased. All have signified their intention of being present, one coming from Stockton and another from Los Angeles for the event. Mr. August G. Headman acted as spokesman for the Charter Members, and gave an address on the early history and organization of the Club.

The Honorary Members of the Club invited as special guests are Cass Gilbert, Irving K. Pond, Clarence R. Ward, John Reid, Jr., George W. Kelham, John Bakewell, Jr., Arthur Brown, Jr., and John Bauer. Messrs. Reid, Kelham, Bakewell, Brown and Bauer were all elected to Honorary Membership at a recent meeting of the Club.

A very interesting excursion was made to the plants of the Paraffine Companies, Inc., at Emeryville on last Saturday, September 15, by members of the Club as guests of the company. Upon arrival at the plants a delightful luncheon was served, after which the guests were conducted through the plants where they learned much regarding the manufacture of paraffine products.

Edward L. Frick is now patron of the Atelier and will continue as such during the ensuing year with the co-operation of Ernest Weihe. The students have done excellent work since Mr. Frick has had charge, and a good year is looked forward to. The 1923-24 Atelier season opened Saturday, September 22d, with an enrollment of about 15. In connection with this, a free-hand drawing class has been organized and Mr. Ralph Wilkins of the California School of Fine Arts has been secured to act as instructor. This class has started with a good enrollment, and it is intended to change it to a Life Class, as soon as the present course is finished.

NEW YORK ARCHITECTURAL BOWLING LEAGUE

THE New York Architectural Bowling League was reorganized September 22, and games are being held every Tuesday at Joseph Thum's alleys, Thirty-first Street and Broadway, beginning at eight o'clock.

The membership of the Club is as follows:

Office	Representative
B. W. Morris	J. P. Farrell
McKenzie, Voorhees & Gmelin	G. A. Paradies
Cass Gilbert	H. G. Poll
Donn Barber	G. A. Flanagan
McKim, Mead & White	C. Hess
Thos. W. Lamb	A. F. Darrin
W. L. Stoddart	D. Soper
Sommerfeld & Steckler	J. Finegan
D. Robinson (Arch't Dept.)	M. R. Johnke
Alfred C. Bossom	E. L. Capel
J. Gamble Rogers	M. L. J. Scheffer
Warren & Wetmore	N. T. Valentine

The officers are as follows: President, E. L. Capel; Vice-President, H. G. Poll; Treasurer, P. M. Lynch; Secretary, N. T. Valentine. The members of the executive board are: Chairman, E. L. Capel; H. G. Poll; P. M. Lynch; N. T. Valentine; J. P. Farrell; G. A. Paradies; A. F. Darrin. Donald Campbell looks after the publicity.

Tournaments—Five Man—for cup; Three Man—for cup; Gold Medal to High Score Bowler (Individual); Gold Medal to High Average Bowler (Individual); Silver Medal to Teams Winning Cups; Silver Medal to Teams having highest score in one game. A Bowling Ball as a prize to the winner of Cover Design. Five Man Tournament—2 rounds; Three Man Tournament—1 round.

Standing to Oct. 15, 1923.

Office	Won	Lost	P.C.
Dwight Robinson	2	0	1000
McK. & V. & G.	2	0	1000
Alfred C. Bossom	2	0	1000
Cass Gilbert	1	1	500
W. L. Stoddart	1	1	500
Warren & Wetmore	1	1	500
Thos. W. Lamb	1	1	500
Donn Barber	1	1	500
J. Gamble Rogers	0	2	000
Sommerfeld & Steckler	0	2	000
McK., M. & W.	0	2	000

High Team Score—Dwight Robinson, 774. High Individual Score—Jones of D. Robinson, 200.

The Club was organized in 1906. Competitions were held from 1906 through the season of 1912-13. After that date no competitions were held until the Club was reorganized and once more became active last month. This is an excellent idea and one that it seems might well be taken up in other cities.

PERSONALS

JONES, ROESSLE and OLSCHNER and SAMUEL G. WIENER have formed a copartnership for the practice of architecture under the firm name of Jones, Roessle, Olschner & Wiener, with offices Ardis Building, Shreveport, La., and Maison Blanche Building, New Orleans, La.

JOHN GALEN HOWARD has become associated with E. GEOFFREY BANGS, HENRY C. COLLINS, HENRY TEMPLE HOWARD and CHARLES F. B. ROETH, Architects, for the practice of architecture under the firm name of John Galen Howard & Associates, with offices in the First National Bank Building, San Francisco, Cal.

RODIER and KUNDZIN have opened an office for the practice of architecture at 1216 Eighteenth Street, N. W., Washington, D. C.

THE ROCHESTER ASSOCIATED ARCHITECTS AND ENGINEERS, INC., have opened an office for the practice of architecture and engineering at 600 Duffy-Powers Building, Rochester, N. Y.

LAWRENCE A. KERR and HAROLD WALSH have purchased the interest of J. C. Berry in the firm of J. C. Berry & Co., Architects, Amarillo, Texas. The firm will hereafter be known as Kerr & Walsh, Architects. J. C. BERRY, Architect, has opened an office at suite 2, Horne Building, Long Beach, Cal.

MARTIN A. SHELDON has removed his offices to 950 Monadnock Building, Market Street, near Third, San Francisco, Cal.

SCOTT QUINTIN has formed a partnership with THOMAS L. KERR under the firm name of Quintin & Kerr, Architects and Engineers, with offices at 310-11 Weber Building, Alhambra, Cal.

G. MEREDITH MUSICK has opened an office for the practice of architecture at 320 Guardian Trust Building, Denver, Col.

BERTRAM A. WEBER will continue the architectural practice of his father, Peter J. Weber, in his offices at 343 South Dearborn Street, Chicago.

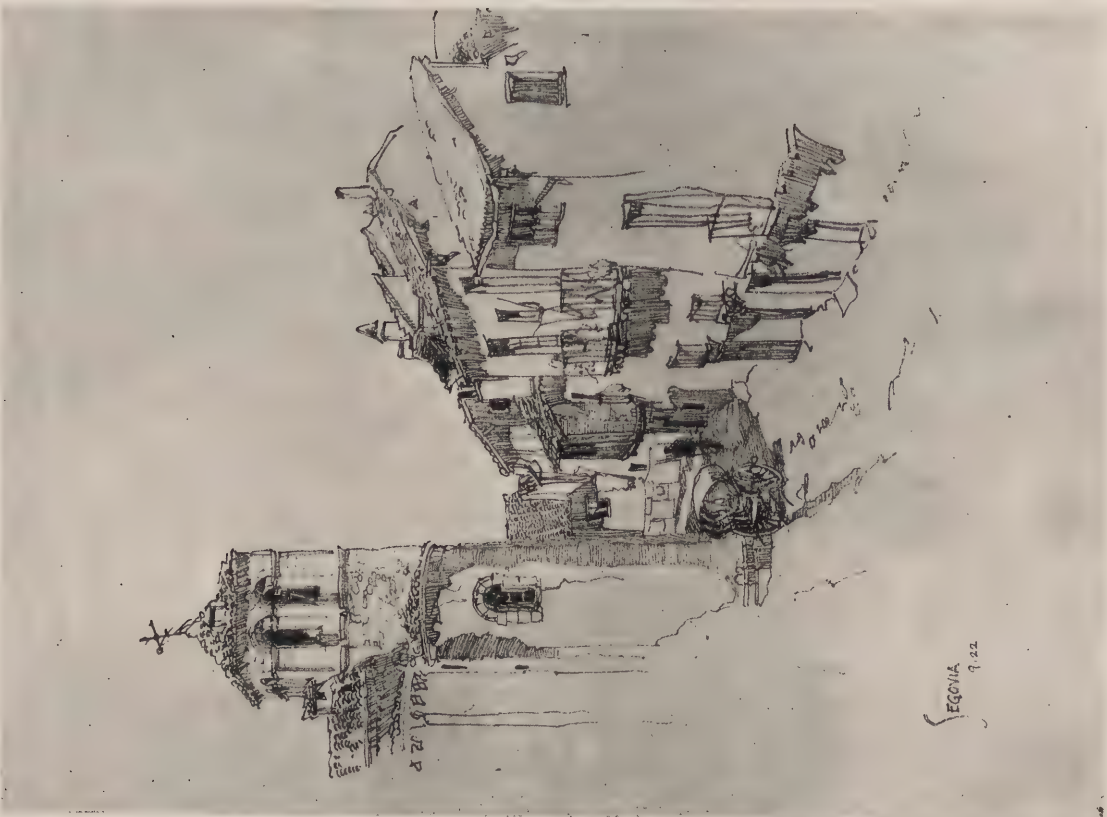
J. A. ALTSCHULER has opened new offices for the practice of architecture at 115 East North Street, New Castle, Pa.

CHARLES E. KEYSER, Architect, has removed his offices to 317 Portsmouth Building, Kansas City, Kan.

PENCIL POINTS



BARCELONA 9. 22



LEGONA 9. 22

Pencil Sketches by Ernest E. Weihe

PENCIL POINTS

M. CAMILLE E. GRAPIN ADDED TO THE FACULTY OF CARNEGIE INSTITUTE OF TECHNOLOGY

CAMILLE E. GRAPIN, a distinguished architect of France, has been appointed Professor of Architectural Design at Carnegie Institute of Technology for the coming year, according to an announcement from President Thomas S. Baker. Mr. Grapin's appointment is in line with the announced policy of the Pittsburgh institution to secure for its faculty, men of the highest authority in their respective professions.

In Mr. Grapin, Carnegie Tech. is securing an artist whose unusual training qualifies him to assist in broadening the work covered in the Department of Architecture. He has repeatedly distinguished himself through his numerous accomplishments as a graduate student in the National School of Beaux Arts in Paris.

He was born in France in 1886, and was graduated from the National School of Beaux Arts in 1914, doing graduate work in the following years. While a student at the school, he was awarded the Jean Leclerc Prize which is given to the student receiving the greatest number of medals and prizes at the school. For the year of 1919-1920 he was given the Equal Second Prize in the Detouches, Delages and Roux Competition, one of the most important competitions in France.

Among other honors conferred upon Mr. Grapin were a prize given to the student having the greatest number of values in problems, and the Chaplain Prize, which is given to the student winning the most values in design. Both of these awards were made by the Central Society of Architects in France.

THE AMERICAN ACADEMY IN ROME

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following items of news:

"August has been the month of vacations, repairs, annual report writing, departures of professors and fellows, and undisturbed work of the seven or eight fellows in residence.

"Prof. Showerman brought his Summer School to a successful termination with a written examination, and he and the members of his family are now en route for America. Every member of the Summer School will resume his teaching of the classics next year with greater enthusiasm and a better knowledge of Roman life and topography, thanks to Prof. Showerman's profound knowledge of Roman history and to his inspiring manner of imparting what he knows.

"Before leaving Rome Prof. Showerman donated fifty dollars to the library for the purchase of classical books.

"Mrs. Tenny Frank left unexpectedly on account of the sudden death of her father.

"Two of the fellows of the Academy, whose terms expired, have gone; they are Miss Adams of the Classical School and Architect Smith. The latter is now travelling in France; and later on he takes up a fellowship from the University of Pennsylvania, which will carry him to England and Spain. He returns to America in January or February.

"One new visiting student in architecture has registered with us, Mr. F. J. Woodbridge of Amherst and Columbia; and Mr. Leicester Holland, Associate Professor of Architecture in the American School of Classical Studies at Athens was accorded full privileges of the Academy in exchange for the many favors to our students when in Greece on the part of the authorities of that School.

"Architect Hafner has been hard at work upon his problems concerning S. Peter's. In this connection he and I have called upon H. E. Cardinal Merry del Val and upon the architect in charge of the Cathedral; and we have climbed all over the dome and followed up the copy which Mr. Hafner is having made of the model by Michel Angelo of the dome.

"A 'Friend of the Academy' has contributed \$500 for placing our splendid bas-reliefs of the Arch at Benevento on the walls. This work is now progressing satisfactorily.

"Fresco painting has now assumed such proportions that more commodious quarters have been provided. Mrs. J. Montgomery Sears kindly donated the money needed for this transfer.

"All the gifts to the Academy—such as fireplaces, billiard table, trees, etc., have now been labeled with the names of the givers and the dates when the objects were given.

"Finally, I have to report the death of our valued porter, Vittorio Madalena.

THE EMBRYONIC SKETCH

(Continued from page 23)

It is almost needless to say that no jury will encourage esquisses on which fuzzy reason, indecision or lack of thought is shown, nor would a student himself if he were suddenly put in place of the jury. So much for the student.

An extraordinary development of the qualities mentioned above sometimes produces a very remarkable result. I have known one foreign architect who makes no preliminary sketch whatever, but thinks about a subject until he is apparently able to project it into the air in front of him, and taking a clean sheet of paper will start in one corner and draw straight across the paper until he has a complete record of his idea.

To illustrate this article, we have selected a series of plates which while they are very different one from the other, have one strong common characteristic, which is, that they are the clarifying, concrete expression of an impelling idea.

Figure 1 is a rough sketch of the possible solution on the program of a Marine Museum, which demanded a large entrance vestibule, a series of small exhibition rooms and an amphitheatre disposed around a court, in the center of which is a pool for large fish. The sketch, made *en loge* in Paris, by M. Expert, has an unusual quality of suggestion. The plan, the more difficult elevation and the section, have all been roughly thought out.

Figure 2 is a sheet of studies of St. Gauden's for the Shaw Monument. It shows just how they went through his mind—a whole series of different ideas within a very small compass.

Figure 3 is a study for the forecourt of St. Peter's by Bernini. The curious thing about this is the mystical idea of the Arms of the Church embracing the people. Any one who knew this drawing before seeing one of the enormous Fête Day crowds becoming pigmy-like in the Piazza, must have had an even more extraordinary impression.

Figure 4 is a drafting room sketch made by the late Mr. McKim while studying the problem of Bellevue Hospital. It has exceptional solidity, the treatment of the masses is very clear, simple on either side, with all the interest in the center where there is also a deep court. An arcade appears to screen the court and to unify the composition by carrying the base line of the wings across the elevation.

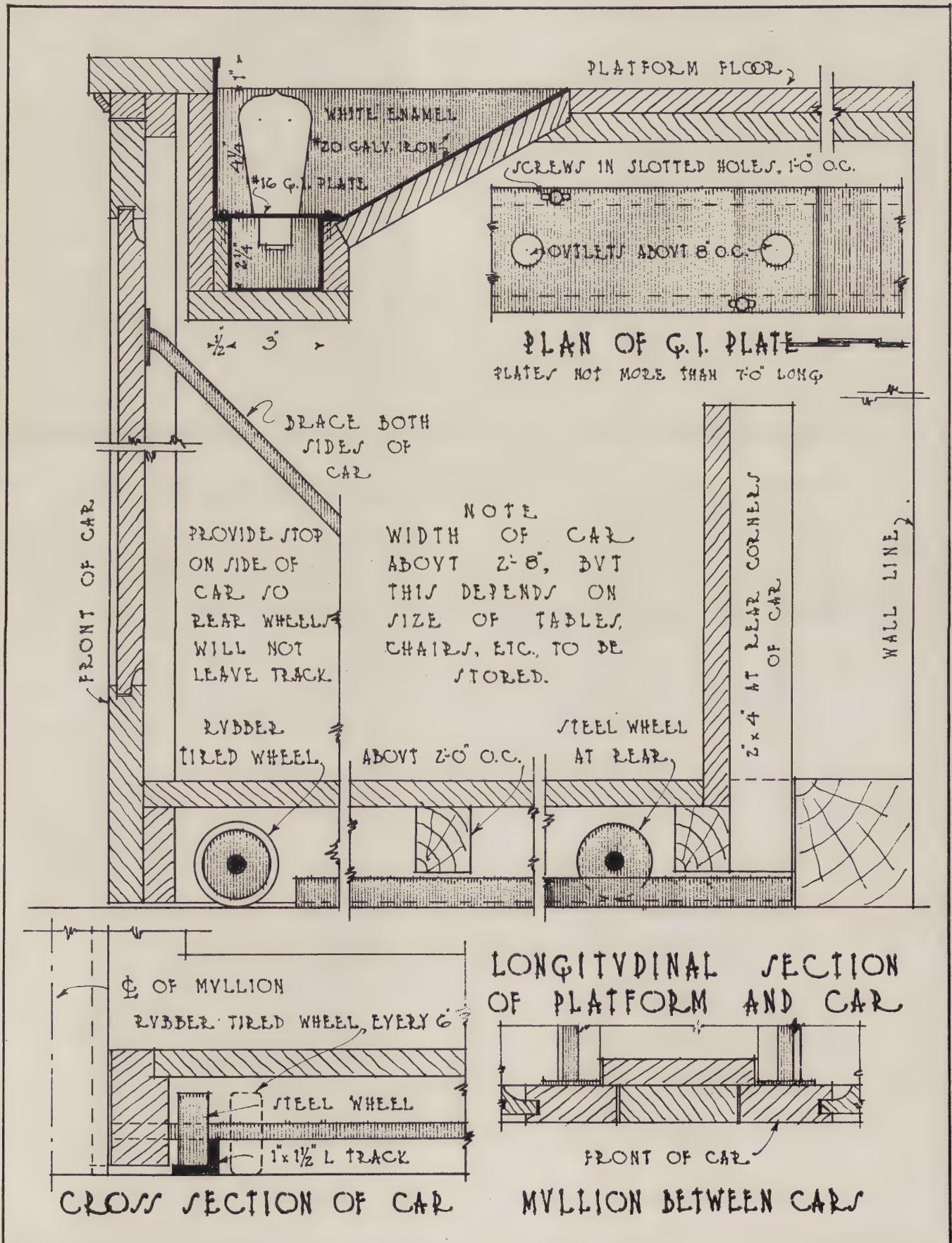
Figure 5, a sketch of Leonardo Da Vinci's for a mausoleum, shows a very complete and directly expressed idea.

Figures 6, 7 and 8 are three plans by Michael Angelo for one site. They serve to show his grasp of the construction and of the constructive qualities.

ADDRESS WANTED

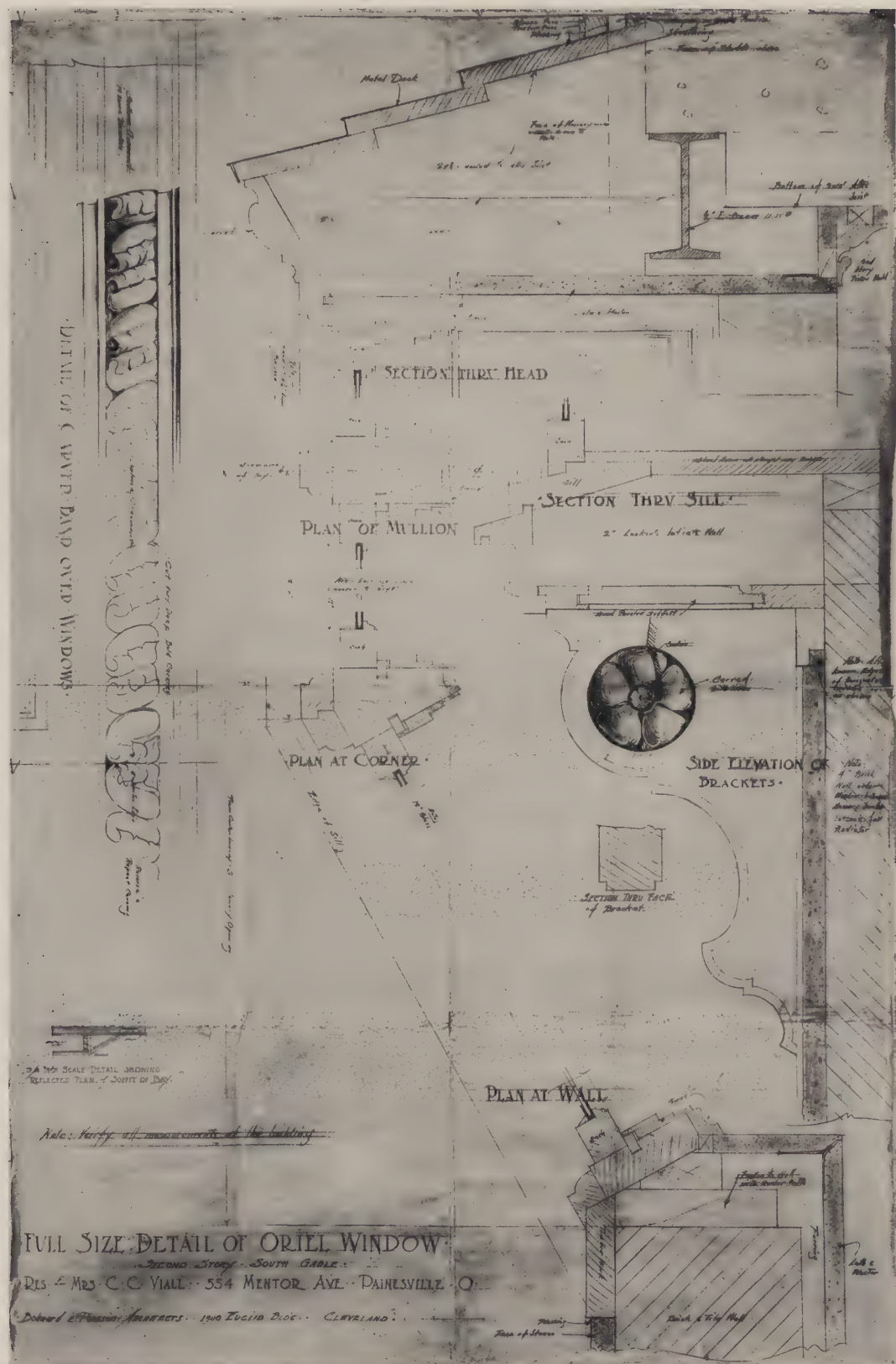
WE HAVE received from G. William Kern, 2 Rolf Apartments, Wheeling, W. Va., a request that we publish the fact that he would like information concerning Cyril F. Broad, architectural draftsman, native of Great Britain, last known to have been employed in California, and to have enlisted in the Canadian Army.

PENCIL POINTS



Details of Construction—Cars for Storage of Chairs, etc., Under Platform in School or Church Auditorium. Hewitt & Brown, Architects, Minneapolis, Minn.

PENCIL POINTS



Details of Construction—Oriel Window Bohnard & Parsson, Architects, Cleveland, O.

PENCIL POINTS

ARCHITECTURAL SUPERINTENDENTS MANUAL

(Continued from page 50)

of course also subtracting any expenses he may already have incurred. If there is any provision for the matter in the contract, of course that should govern.

At the close of the work, there is sometimes reason to require assurance that there are no unpaid bills which will fall on the owner after he has paid the contractor. This is almost a matter for a lawyer, as nearly every state has Lien Laws to enable mechanics to get their money, and sometimes such documents are recorded with the County Clerk, but in general a Release of Lien somewhat in the following form must be obtained from all those who have supplied material or labor for the job, together with a statement by the contractor that this is signed by all:

"WHEREAS, we the undersigned have furnished materials and performed labor for the erection of the residence for John Smith, at Smithtown, N. Y., and have agreed to release all lien which we have on said land and building by reason of the premises.

"Now These Presents Witness that we the subscribers, for and in consideration of the premises, and of payments made to us, have released John Smith, his heirs and assigns, from all manner of liens, claims and demands whatsoever against said building and land, so that he, his heirs and assigns, may hold the same freed and discharged from all liens, claims and demands against same.

"In Witness Whereof we have hereunto set our hand."

Independently of the cost of the work, the superintendent sometimes has to decide what part of his own expenses are legitimate charges to be paid (through the architect) by the job. As a general rule, it may be said that all expenses incurred because you attended to that job are chargeable. Pay your usual carfare to the office, and then charge all other carfare. If you are on a trip, charge all your meals, hotel bills, etc. But do not charge

personal expenses, like souvenir postals to your family, or clothes. Whether you are entitled to travel in a taxicab or a five cent trolley, or whether put up at a ten dollar or a one dollar hotel, will depend somewhat on circumstances, the character of the job, and your relative importance. But in general it may be said that architects expect to be treated with the consideration that is due to a respected profession, and while their employees may be inferior in importance, at least they are entitled to fair accommodations.

ATELIER CAIRNS, MEMPHIS, TENN.

IN CELEBRATION of the resumption of activities Atelier Cairns of Memphis, Tennessee, entertained with a smoker on the evening of September 25.

A representative crowd of the art element of Memphis turned out, architects, draftsmen, commercial artists, decorators, and others interested, attending. Among the speakers of the evening whose talks were enjoyed, were Mr. Geo. Awsumb, President of the Architects League, Mr. Bayard Snowden Cairns, Patron of the Atelier, Mr. Hubert T. McGehee, architect, Mr. Achilles Stubbe, decorator, and Mr. Eldon Anderson, commercial artist.

The Atelier starts the season with a new name, having adopted that of its patron. The change was made as an expression of appreciation of the enthusiastic leadership of Mr. Cairns since the Atelier was organized. Mr. Cairns was of the class of 1899, Columbia University and continued his studies after graduation at Atelier Pascal, Paris, 1900-1903.

The Atelier has a diversified program for the coming year including outdoor sketching, life class work, and modeling, in addition to the regular beaux-arts work, and is looking forward to a highly successful season. The design for the invitation to the affair was made by Everett D. Woods, Massier of the Atelier.



Invitation Card Recently Sent Out by the Atelier Cairns, Memphis, Tenn.
Design by Everett D. Woods.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION, PART XIII.

BY OTTO GAERTNER

In this series of notes Mr. Otto Gaertner, A.I.A., Associate Member American Society of Civil Engineers, is treating of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Garages (Continued)—

Such cars are handled when they are empty. Another building may be a material distributing plant where trucks are first loaded on the several floors of the building and are then sent out of the building by way of the elevators which lower them to the entrance floor. When five ton capacity trucks are used and, as sometimes happens, they may be overloaded so that the combined weight of the truck and the load is over the fourteen thousand pounds, the load on the elevators becomes rather heavy.

It can readily be seen that the load on the elevators may easily become even greater than this and often it is well to be prepared for emergencies, when they occur. In garages and other buildings, where the bottom floor is used for the storage of cars, merchandise or materials, and the floors above are used for the storage of cars, the repair shops are often placed on the top or on one of the upper floors. Should a partially or fully loaded truck be found to be in need of a few repairs before being sent out it might not be possible to make them on the stock room floor. In these days, when labor is at a premium and when an early delivery of goods means greater profits or better satisfied customers, it is neither economical nor expedient to unload the truck before taking it up to the repair shop.

This can be done if the elevator is of ample capacity. Of course, the greater the loading capacity of the elevator, the more flexible is the working arrangement of the business, especially if the size of the elevator car is ample.

When it comes to the size, the nature of the traffic must again be borne in mind. If only small pleasure cars are handled the elevator car platform may be smaller than if large trucks are to be carried from floor to floor. For medium priced pleasure vehicles generally housed in the smaller garage buildings, a car platform eight feet wide and eighteen feet long has been found to give good service. In automobile service stations it may be necessary to consider making the elevator car platform large enough to accommodate a broken down vehicle whose front or rear is supported by a towing car. Another method of bringing a broken down car from one floor to another may interfere with the elevator service.

While such cases seldom if ever occur, there may be a great loss of revenue or patronage if they or other out of the ordinary cases cannot be quickly taken care of without annoyance to patrons. Such delays in the service also increase the overhead of the establishment even if there is more than one elevator.

Some people advocate the use of elevators having the following dimensions, loads, and speeds as giving satisfactory service. In small garages for medium priced pleasure vehicles they suggest elevator car platforms eight feet wide and eighteen feet long; for high priced and closed pleasure cars, nine feet wide and twenty feet long; for small commercial vehicles, ten feet wide and twenty feet long; for large trucks, ten feet wide by twenty-four feet long. For high priced pleasure cars and for closed cars the elevator should really be larger than necessary so as to surely eliminate any danger of damage to the cars by unskilled drivers, such damage being costly.

On the assumption that with the increase in the sizes and weights of the vehicles to be carried, the heights of the buildings would also be increased, they advocate that the speeds be increased also, so that for the elevators just mentioned the speeds would be from twenty to forty feet and from thirty to sixty feet per minute respectively for the first two sizes, and from twenty to fifty feet and from sixty-five to one hundred and twenty-five feet per minute for the last two. The load capacities for the four would be five, six, ten, and twenty thousand pounds in the order mentioned above. Some people allow thirty pounds per square foot for pleasure vehicles and thirty-five to forty pounds per square foot for trucks.

There is no fixed rule and the garage owners' financial ideas often govern the number, size, capacity, speed, type and quality of the elevator installations. When special conditions occur as to the use, space available, height of shaft, etc., they can generally be overcome by a little manipulation of the equipment furnished by most manufacturers. There are, however, numerous rules and regulations of local and state departments as to the construction and dimensions of the elevator shaft and its surroundings as well as for the elevator equipment. The Board of Fire Underwriters, and the Insurance Exchange also have their rules which must be followed if the lowest insurance rates are wanted.

While we cannot dwell long on the types and details of elevator equipment we will give a few of interest to the reader regarding them. Their selection, except in cases where a mechanical engineer writes a very lengthy and exact specification for the equipment, is one calling for experience and judgment. No two manufacturers furnish exactly the same type of equipment so that an engineer's specification may be more easily followed by one than by another and the bids vary accordingly. In the absence of an engineer the garage owner, his architect, or his engineer calls in the representatives of the manufacturers, puts the problem before them for their suggestions and approximate estimates. He may then modify his own requirements and instruct them upon which of their types of equipment he wishes them to estimate and submit specifications. He must have a general knowledge of the equipment involved so that he can intelligently compare the specifications and select the type which gives the best value for its cost. There are often cases where the elevator is also used as a passenger elevator so that a better type elevator must be installed.

Generally speaking, there are several types in use, namely the hydraulic type of say from one to twenty-four thousand pounds capacity and with speeds from twenty-five to four hundred feet per minute, the drum type, and the traction type. The traction type may be the geared type with speeds from twenty-five feet per minute to over one hundred and fifty feet per minute, or they may be of the gearless type with speeds from four hundred and fifty to six hundred feet per minute. The gearless traction type of elevator is supposed to be the highest development of the traction idea, being very easy and smooth in operation. There is a type of operatorless electric freight elevator that is equipped with a leveling device and push button control so that several can be operated by an attendant from a control board, the doors being equipped with automatic door opening and closing devices. The attendant also has an intercommunicating telephone system to aid him. A single elevator may have push button controls and be operated by any one, not a regular attendant, if desired. Hand power elevators are only used when the service is infrequent and conditions justify a very small investment. In such installations, the gear ratios are necessarily low and the rope hauling process is slow and tedious.

(To be Continued)

PENCIL POINTS

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Andersen Window Frames.—Illustrated booklet with drawings covering design and construction of window frames. 24 pp. 8 x 11. Andersen Lumber Co., Bayport, Minn.

Safety From Fire.—Treatise on fire protection engineering as applied to construction and occupancy of buildings. 74 pp. 6 x 9. Associated Metal Lath Mfrs., 123 W. Madison St., Chicago, Ill.

Floor and Roof Drains.—Illustrated handbook showing up-to-date practice, diagrams, specifications and much useful data. 80 pp. 5 x 6. Josam Mfg. Co., Michigan City, Ind.

Du-Lite.—Illustrated booklet on treatment of factory and mill interiors with special reference to the proper utilization of light. 8½ x 11. 16 pp. E. I. duPont de Nemours & Co., Paint and Varnish Division, Wilmington, Dela.

North Carolina Pine.—Brochure illustrated with photographs and drawings with frontispiece in color, on the subject of planning the new home with particular reference to the exterior and interior woodwork. Examples of well designed homes, floor plans, etc. 24 pp. 8½ x 11. North Carolina Pine Association, Norfolk, Va.

Quality Centrifugal Pumps.—Specification folder, looseleaf, containing complete data on all types of pumps for building use, diagrams, layouts, etc. 9 x 12. Chicago Pump Co., 2300 Wolfram St., Chicago, Ill.

Alpha Cement—How to Use It.—Handbook with blueprints, diagrams, details, covering many types of concrete construction. Specification data. 104 pp. 6½ x 10. Alpha Portland Cement Co., Easton, Pa.

Celotex Tests.—Report made by Robert W. Hunt & Co., covering tensile and transverse tests on wall board materials. Also complete data on Celotex for many various uses. The Celotex Co., 111 W. Washington St., Chicago, Ill.

Seamless Tubing.—Handbook for architects, engineers and superintendents, covering subject of seamless copper and brass tubing. Much technical data, tabular matter, etc. 104 pp. Convenient pocket size. Bridgeport Brass Co., Bridgeport, Conn.

Atlantic Terra Cotta.—Monthly brochure. October issue deals with 15th Century Terra Cotta, illustrations being drawn from Bologna. 8 full page plates. The Atlantic Terra Cotta Co., 350 Madison Ave., New York City.

Changeable Bulletin Display Boards.—Bulletin on the subject of display boards for office buildings, theatres, etc. 24 pp. 6 x 9. The Tablet & Ticket Co., 1015 W. Adams St., Chicago, Ill.

Lebanon Speedee-Heat.—Data sheet on subject of good steam heating with typical layout and other useful information. Lebanon Machine Co., Inc., 98 Park Place, New York City.

E. S. Bulletin.—Many interesting items on the subject of elevator signals, safety devices, etc., etc. 8 pp. 8½ x 11. Elevator Supplies Co., 1515 Willow Ave., Hoboken, N. J.

The Story of Commercially Pure Iron.—Treatise on subject of corrosion in its relation to materials used in building construction. 48 pp. 6 x 9. American Rolling Mill Co., Middletown, Ohio.

The Right Angle.—Monthly bulletin, the October issue of which treats of fire prevention. 24 pp. 8½ x 11. General Fireproofing Co., Youngstown, Ohio.

Mortar Colors.—Data sheet with 12 panels in color showing mortar joints in combination with brick of various colors and textures. Also much useful information on the coloring of stucco. 8½ x 11. Clinton Metallic Paint Co., Clinton, N. Y.

Eye Comfort.—Looseleaf portfolio on the subject of modern lighting devices. National X-Ray Reflector Co., 235 W. Jackson Blvd., Chicago, Ill.

Crysteel.—Booklet illustrated in color covering a wide variety of porcelain enameled products, lighting fixtures, etc. 24 pp. 6 x 9. Benjamin Electric Mfg. Co., 847 W. Jackson Blvd., Chicago, Ill.

Irving Specialties.—Illustrated booklet giving complete information on fireproof ventilating flooring for use in industrial plants, as a covering for areaways and for many special uses. 80 pp. 4½ x 8½. Irving Iron Works, Long Island City, N. Y.

Fireplace Satisfaction.—Illustrated booklet with blue prints covering installation of Humphrey Radiant-fire. General Gas Light Co., Kalamazoo, Mich.

Your Bathroom with the Kenney Shower.—Illustrated booklet showing methods of installing the Kenney Curtainless Shower. 16 pp. Kenney-Cutting Products Corp., 507 Fifth Ave., New York City.

Minneapolis Dual Control.—Folder explaining improvements in the science of automatic heat control as applied to hot water, steam or vapor heating systems. Minneapolis Heat Regulator Co., Minneapolis, Minn.

Specifications for Building Equipment Control Apparatus.—These specifications include the requirements for motor control equipment in public buildings, schools, etc. 8 pp. 6 x 9. Electric Power Club, B. F. Keith Bldg., Cleveland, Ohio.

Adscoc Heating.—Attractive booklet, 16 pp., covering subject of low pressure steam heating systems. American District Steel Co., North Tonawanda, N. Y.

Beautiful Homes.—Folder in colors, showing color schemes for hall, living-room, dining room, bed room and pantry in attractive residences. Berry Bros., Detroit, Mich.

Lighting Service for Banks and Insurance Companies.—Brochure illustrated by engravings and diagrams showing both direct and indirect lighting equipment suitable for use in banking and similar buildings. Contains much practical data. 8 x 11. 32 pp. I. P. Frink, Inc., 24th St. and 10th Ave., New York City.

Glass Lined Laundry Chutes.—Instructive little booklet on an interesting specialty. Indispensable in hospitals and other institutions and extremely useful in modern residences. The Pfaunder Co., Rochester, N. Y.

Copper—Its Effect upon Steel and Roofing Tin.—Scientific treatise on the subject showing exhaustive comparative tests of roofing materials. Fully illustrated. Specifications. Plates showing details for tin roofing and sheet metal work. 40 pp. 8½ x 11. American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

The Banking House in Art Metal.—Attractive illustrated brochure covering subject indicated. Many full page illustrations of banking interiors properly equipped. 70 pp. 8½ x 11. Art Metal Construction Co., Jamestown, N. Y.

Crittall Universal Casements.—Catalog No. 22 in sepia illustrating and describing completely full line of casement windows. Many full-page plates, sectional drawings, details, etc. A valuable addition to any architect's working library. Crittall Casement Window Co., Detroit, Mich.

Duriron Acid-proof Drain Pipe.—A handbook for architects and engineers covering layouts for laboratories and other conditions involving the problem of pipe corrosion. Much valuable technical data. Sectional drawings, tables, specifications. 20 pp. 8½ x 11. The Duriron Co., Dayton, Ohio.

Modern School Lighting.—Illustrated booklet with tables covering subject. Useful diagrams and other specification data. 36 pp. 6 x 9. The Holophane Glass Co., 342 Madison Ave., New York City.

Once Used Water.—Booklet on the subject of washing and bathing in running water. Illustrated. Shower fixtures, specialties, etc., are listed and described. 16 pp. Speakman Co., Wilmington, Dela.

The Bond That Guarantees the Wall.—Illustrated brochure showing advantages and uses of Carney's cement for mortar. 24 pp. 8½ x 11. The Carney Co., Mankato, Minn.

Solving Your Painting Problems.—Illustrated booklet containing specifications for both inside and outside work. 44 pp. 8½ x 11. Hockaday Co., 1823 Carroll Bldg., Chicago, Ill.

The Story of Shearduct.—Brochure illustrated with full page pencil drawings of buildings by prominent architects in which Shearduct has been used. Specifications and 6 pages of sectional drawings. Tables of dimensions, etc. 40 pp. 8½ x 11. National Metal Molding Co., Pittsburgh, Pa.

Fireproof Veneered Doors and Trim.—A 16 page book. 8½ x 11. Containing full information and complete details and specifications relative to Pyrono Fireproof Veneered Doors and Trim, also Pyrono details in sheet form for tracing. The Compound & Pyrono Door Co., St. Joseph, Mich.

Lupton Steel Windows.—Bulletin with price list covering the subject of steel windows for apartments, residences, basements, schools, hospitals, etc. 16 pp. 8½ x 11. David Lupton's Sons Co., Allegheny Ave. and Tulip St., Philadelphia, Pa.

The Book of Masterbuilt Floors.—Attractive 12 page booklet done in color covering descriptions and uses of Colormix concrete floor hardener, waterproofer and dustproofer. The Master Builders Co., Cleveland, Ohio.

Lithoprints.—Portfolio describing methods of making lithoprints, their uses and advantages. Looseleaf binder. 8½ x 11¼. The Lithoprint Co., 41 Warren St., New York.

PENCIL POINTS

A LETTER ON SPECIFICATION WRITING

AN INTERESTING and helpful letter that we have received from Edmund H. Poggi, Architect, Wilkes-Barre, Pa., is printed below.

"It is my opinion that your department 'The Specification Desk' constitutes a most valuable part of your very good magazine. Without doubt the Architectural profession in general has slurred over the matter of specifications for years past, and has therefore been subjected to much well deserved criticism.

"Plans and elevations, perspectives, and pictures of buildings find places in exhibitions and are intensely interesting to the general public, whereas specifications or technical information would deeply bore the average citizen. My experience in Architecture, in contracting, and in the shop, field and office, as well as the rendering of expert Court testimony have, however, convinced me of the supreme value of the specification.

"Incidentally, I desire to express my appreciation of the type of Architect who has willingly permitted his specification to be published, and who has said unselfishly 'Shoot,' with the result that many have shot. May we not see some of the shooters' specifications?

"In the matter of standardizing specifications would it not be well for the experts in the various lines to compile a glossary of terms which are understandable to the mechanic, and in order that items of similar character may be singled out? In some portions of our Country the terms Rain Conductor, Downspout, and Leader describe the same article. In some places the word Saddle means Threshold, etc. The manufacturers could be of great assistance in this matter of the standardization of terms.

"My own specifications are long but are intended to be actually specific. It is my purpose to acquaint the contractor and mechanic with my precise meaning, and I have found that where the intention is definite there is much less room for contention. They are carefully indexed and are sub-divided by Sections, as for instance: Section 1 contains Form of Proposal and Instructions to Bidders. Section 2 refers to General Conditions, Special Conditions, Scope of Work, and Materials: Miscellaneous. Section 3 refers to Excavating and filling, Concrete Work and Forms, Masonry, etc.

"The matter under the heading referred to is further divided under captions and the paragraphs are made as small as possible in order that an item may be located in the least possible time, and to eliminate the necessity for reading a lot of useless text which may be non-essential in the particular instance.

"Under the head of 'Materials: Miscellaneous' are listed and specified those materials which the general contractor and his sub-contractors as well may employ, and the purpose is to standardize the materials to be used throughout and eliminate repetition. In the General Building Specifications I refer to such items as cements, lime, sand of various screens for the several purposes, aggregates, reinforcements, etc., and in the Plumbing Specifications to pipe, such as earthenware H & S, land tile drain, brass, wrought iron, steel, lead, as well as fittings, valves, connections between pipes, and specification material of like character which may be standardized from one specification to another.

"Among the multitude of items is one which I have not seen in the specification of others, and which relates to the storage of materials upon operations of extensive character where a number of contractors are employed under separate contracts. The drawings designate the storage spaces allotted to each contractor, reserving all trench spaces and temporary or permanent driveways, and the specifications require the contractors to occupy only those spaces allotted to them. This is a highly valuable precaution but one which can hardly be recommended to those who have scant experience in the field. It is a fair notice to the contractor concerning his limitations, and affords each contractor a fair chance. Furthermore it avoids the possibility of a contractor storing several tons of materials

across the site of a trench which must be excavated by another contractor, with a resultant loss in dollars and cents to somebody, possibly the Owner.

"However, although discussions regarding specification writing are of much value, the thing of greatest value is the specification itself. How does it appear in *Your* specification (?) is the question that goes home, and I shall be glad to see the specifications of experts reproduced as they actually appear, not Government specifications which are subject to limitations, but the specifications of the leaders in Architecture in New York and Chicago for whom the rank and file of the profession have the deepest respect and admiration."

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of PENCIL POINTS, published monthly at Stamford, Conn., for October 1st, 1923.

State of New York, }
County of New York, } ss.,

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared W. V. Montgomery, who having been duly sworn according to law, deposes and says that he is the Business Manager of the corporation publishing Pencil Points, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 448, Postal Laws and Regulations, printed on the reverse of this form to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of	Post office address
Publisher, The Pencil Points Press, Inc.,	19 East 24th St., N. Y. City.
Editor, Eugene Clute,	19 East 24th St., N. Y. City.
Managing Editor,	None.
Business Manager, W. V. Montgomery,	19 East 24th St., N. Y. City.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

The Pencil Points Press, Inc., 19 East 24th St., N. Y. City.
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3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is..... (This information is required from daily publications only.)

W. V. MONTGOMERY,
Business Manager.

Sworn to and subscribed before me this seventh day of September, 1923.

[SEAL.]

G. H. SYKES,
Notary Public.
My commission expires March 30, 1924



The Nebraska State Capitol
Bertram G. Goodhue
Architect

The Nebraska State Capitol is one of America's architectural masterpieces. . . . Earl Horter has caught the fine, upstanding spirit of it in this Eldorado drawing—one of the best pencil sketches he has ever made.

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PENCIL POINTS

THE TECHNIQUE OF RENDERING

(Continued from page 34)

graded, appear to have been used to tone the building and indicate main shadows. Two additional washes, of darker tone and each graded out with water, are used over the openings and shadows cast upon them. The only retouching apparent is in the grilles over the entrance doors, the lines around the sash divisions of the windows and a few secondary, or reflected, shadows in the capitals of the columns and in the main shadows cast by the cornice upon the frieze and by the entablature upon the curtain wall back of the columns. The general effect of the drawing might have been improved if the plane of the stage wall had been darkened, and if the window openings had been somewhat lighter or darker to give solidity to the building and avoid the illusion of looking through the façade into the background. The crisp outlines were drawn with a very hard pencil and have withstood the dark washes well enough to make retouching with black or white unnecessary. Such technique is applicable only to the small size of drawing in which it appears—a drawing about 12x18 inches in size and made to be read at the eye-range for fine printed matter. The original drawing, somewhat soiled and battered during several years in the office, is now less distinct in the original than in the reproduction. The color of the original wash is also warmer than that of the printer's ink.

From the charming and rather over delicate technique of the New Theatre drawing there is a tremendous jump of style and vigor to the masculine drawing of a doorway at Paris by M. Charles Montaland, Figure 22. The original drawing was in a greenish-grey monochrome and the first light washes with which the subject is defined, graded and given its luminous effect are concealed by a retouching of strong washes, stroked and "tickled" on to free the drawing from the effect of the studied process and give it the appearance of carelessness of technique. A certain truculence of style, restrained by dignity, pervades the drawing—and the architecture—and seems to deny academic method and manner while revealing the fact that its author knew all about both. The subject and the scale of the drawing afford scope for personal interpretation. Without a knowledge of academic shades and shadows the luminous shadow cast by the balcony would never have been indicated as it is; but without sympathy with form, and a sense of modelling that has little to do with training, all the academic method in the world would never have enabled its author to produce this beautiful representation which is better than a water color as a presentation drawing and more valuable than a photograph as a correct document. The tricks of the skilled technician appear through the cloak of artistry. Note the effect of firm ruling of high lighting on the mouldings of the doors, the high lights on the arrises of pilasters, and at the horizontal stone joints, and the shade lining along the edges from which the shadows are cast. But if any student thinks such drawing is *all* technique let him try his hand at improving the indication of the consoles, keystone and lunette carvings or the delightful iron balcony grille!

(To Be Continued)

DESIGN IN THE DRAFTING ROOM

(Continued from page 47)

Figure 1 shows a presentation sketch study of a residence and its surrounding garden treatment. The ensemble of plans and elevations presented in this way is very interesting. To see plans and elevations grouped on one sheet always appears very fascinating, especially to the eye of the layman. This method offers an economical and effective way of study and presentation. The suggestion of the contemplated work is practically all shown, and is especially valuable in "talking the matter over," by the architect and client.

Figure 2 shows a "thumb nail sketch" of a plan and a rough study pencil elevation of a camp lodge. The character of the proposed building is well defined; no guessing is necessary to see what is intended; every line counts. This is a practical, deciding, and valuable drafting room

sketch study, and forms the absolute character of how the executed work will appear.

Figure 4 shows a free-hand perspective sketch of a mausoleum. Simple as the sketch may appear, this drawing is the result of experience, knowledge of the value of line for line, the penetrations and intersections indicated forming a complete mass study. This is a very difficult study and requires an absolute control of the imagination, indicated by the pencil on paper.

Figure 5 shows a pleasing way of showing plans and elevations on a presentation drawing sheet. The plans and elevations are more exacting than those shown by illustrations, Nos. 1, 2, 3 and 4. The study is more exacting and precise. Freedom of indication has not been neglected. It would be well if the architect who specializes in dwellings, could present his drawings in this manner. The client would then know "what he is to receive" and the architect would know "what requirements have to be met" after consultation with the client. The drawings are practically ready, then, to work up into shape for estimating and contract purposes. A presentation drawing of this character is well worth the study. Better designs and execution of the smaller types of dwellings would be the result, if indicated and suggested in this manner.

The above examples are merely suggestions set forth. No particular method of study of character or architecture has been given. The ways and means are many.

In the next article on design in the drafting room, this will be more fully considered.

(To Be Continued)

FROM BUDAPEST

FROM a PENCIL POINTS reader who made an architectural inspection of the city hospital at Budapest recently, we have received a letter stating that Dr. Joseph Karsay would like to hear from his brother, Emil Karsay, who is an architectural draftsman in the United States. The letter requests that we make an effort through this journal to let Emil Karsay know that Dr. Joseph Karsay would like to hear from him at the new St. John's Hospital, Budapest, Hungary. As we are always glad to be of service to our readers we hope that this item may come under the eye of the draftsman mentioned and the desired communication between these brothers be established.

A FREE EMPLOYMENT SERVICE FOR PENCIL POINT READERS

(Other Items on Page 68)

Position Wanted: Draftsman with eight years' general experience on residence, apartment and office buildings. Capable of producing preliminary sketches, working drawings and details. Box 215, Pencil Points.

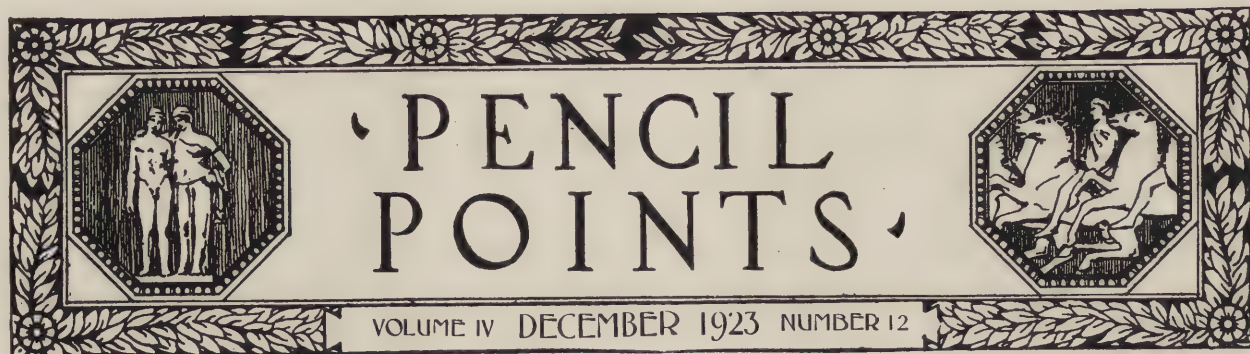
Experienced Draftsman in reinforced concrete and steel wishes position. Excellent references. Box 216, Pencil Points.

Architect would like position in architect's or builder's office, either as draftsman or architectural salesman. Expenses and commission. Box 217, Pencil Points.

Draftsman wishes position—any sort of work—salary secondary consideration. Graduate College of Architecture, Cornell University. One summer of drafting in engineering office. Box 218, Pencil Points.

Position Wanted by draftsman; five years' machinery layout, industrial factory layouts. Maintenance engineer, construction superintendent. Has written specifications and made drawings for power plants, heating, lighting, sprinklers, shelving, elevators, dumbwaiters. Two years at layout and planning machinery and equipment for the manufacture of metal barrels, boxes and garages. One year at drafting and specification writing on office buildings. Box 219, Pencil Points.

For Sale: Lowell, Italian Villas. Unused. Vol. 1, \$15.00; Vol. 2, \$20.00. Box 167, Pencil Points.



A COMPLETE BODY OF ARCHITECTURE

WHEN Isaac Ware chose the quaint title for his book "A Complete Body of Architecture" he gave currency to a phrase that stirs the imagination. How much it means! The expression of human life throughout the ages since the dawn of civilization, the satisfying of human needs, the facilitating of human progress through the art of building. A compound of Art and Science, the co-ordination of the psychic and the intellectual, from which spring creations of stone, cement, steel and burned clay that are infused with life. And each building is in the line of traditional descent, for "all life is from life" in art as it is in nature, despite the blind, self-deception of the occasional proponent of complete originality in design.

Conceived in the spirit of the architect, the design represents his reaction to the problem presented and it receives from him its heritage, a part of what he *is*—his mentality, culture, sensitiveness to beauty, and to the spiritual side of life. It partakes of his physical vigor and his courage. All these things are shown forth in the materialization of the design.

Should not the realization of this fact be the strongest incentive to self improvement on the part of every man who has chosen to participate in the creation of architectural work. His weaknesses and his lacks stand exposed in his work, to his shame, while his strong and good qualities are made evident to his honor.

Since the term "the architect" includes, in the case of every important building operation, the members of the organization as well as the architect himself, what has been said above applies to thousands of men who contribute to the creation of architecture as staff members—draftsmen, designers, specification writers. The quality of the men of the organization is reflected in the quality of the work of the office, what a man puts into his work is not lost, though the man in the street may not hear of him. First of all his "Boss" knows, and his associates in the office know. But most important of all *he* knows and he gains development through doing good work. The man who goes through exercises in an indifferent way never gains much in physical development, but the chap who throws himself with interest and vim into whatever he is doing, gains in strength. A man may well work for years unknown, his identity merged in that of his organization, if he is gaining in development. If a man is merely going through the motions, work-

ing perfunctorily, he is losing his time, and life is measured very sharply in terms of time. If he is working in such a way that he is developing, he will find that he is gradually being given command and that with his increased power is coming the opportunity to express himself through others who are associated with him. In due time he will be fit to head an organization *if* he has the right material in him.

"A Complete Body of Architecture" would cover infinitely more today than the same title covered in the time of Isaac Ware. Though the traditional and historical aspects of the subject are very much the same today as they were then, the practical requirements are much more numerous and complex; for example, the requirements of a great modern hospital, railway terminal, or hotel.

Also the materials of construction and methods of building show a wide departure from Isaac Ware's day. The modern steel frame building with its plumbing, heating and ventilating and elevator equipment is a striking example of the change that has taken place in this respect.

These changes in materials and methods have come about very largely through the necessity for meeting modern conditions and, as a result, the architect of today has at his command materials, methods and equipment that place him in a position that is highly favorable as compared with that of the earlier architects. These changes have also given the architect much more to learn and the continued development in the construction and equipment of buildings makes it necessary for him to keep himself informed of the progress that is constantly being made, and for this information he is dependent upon advertisements and literature prepared by the various manufacturers.

Since modern architectural work has become so complex on the practical side, the preparation of specifications has assumed a place of great importance, a fact that PENCIL POINTS has recognized in the publication of the "Specification Number" last January and in the publication of the monthly department, "The Specification Desk."

Present-day conditions have created other problems that will be discussed in our next issue, which will be a special number, devoted to the subject "Office and Drafting Room Practice."

A feature of the January Issue will be a symposium to which you are invited to contribute a letter expressing your views or describing some method of office management or drafting room practice.



*Figure 27. Competition Design for The Scott Memorial Fountain, Detroit, Mich.
Cass Gilbert, Architect. Rendered by Thomas R. Johnson.*

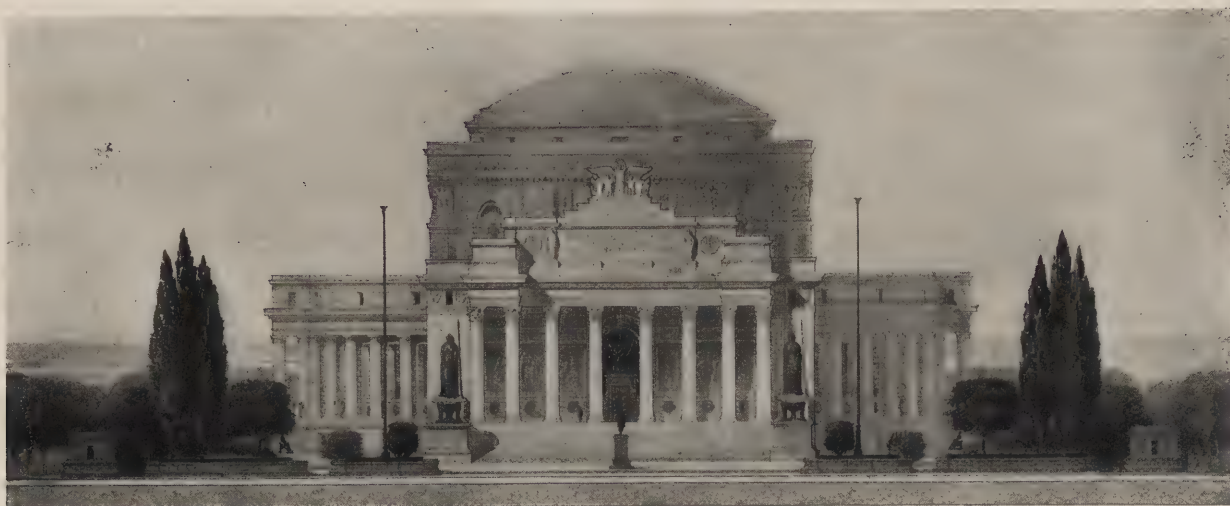


Figure 23. Competition Design for World War Memorial. Francis S. Swales, Architect.

THE TECHNIQUE OF RENDERING, PART IV.

BY FRANCIS S. SWALES

A QUESTION which often presents itself when considering rendering is whether to ink in the line work, leave it in pencil, or to leave it in pencil generally, but ink in such lines as seem to require special emphasis or strengthening to make them perform their proper part.

It is not a certainty that a drawing will be bettered artistically, or technically, by inking in. The purposes of inking in are to make the drawing less liable to damage by being accidentally rubbed; to enable it to withstand many washes, and to define more firmly than with a pencil line the limits of dark washes. It also permits a dirty drawing to be cleaned with a soft eraser. Many draftsmen find the use of the ruling pen a handicap to expression—more often due to the difficulties of making watered ink flow on rag-papers, and maintaining the right tone of ink, than to lack of skill with the instrument.

When plenty of time is available the working advantages and permanency of the inked-in drawing are worth taking into account. This is especially true with the student, or beginner, who may find it necessary to correct several of his washes by sponging out. Under which conditions the ink line will hold its own while the pencil line will require restoring. The disadvantage of ink lines is the tendency to overemphasize detail and cause harshness of effect if the line is a trifle too dark. Another is flatness and weakness caused by a line which is too pale in tone. When time is short, as is nearly always the case with competitions, the advantage of being able to leave the line work in pencil is inestimable. To be able to do so requires habitual cleanliness, precision and decision in workmanship in order to maintain a consistent and firm quality of line. Carelessness of drawing or of using trial

lines means many small erasures. These will show as dark patches the moment the first wash is applied and will require restoration. Small erasures must be avoided with inked-in drawings too; but the inked-in drawing will stand a good general cleaning with a soft rubber which will take out trial, accidental lines, while the pencil drawing would be almost completely erased by the same treatment.

While it is customary to consider inked-in wash drawings rendered with the brush only, the aristocrat of methods—it being the most difficult, requiring the greatest amount of practice, patience and time—few of our present-day draftsmen are willing to forego easier and quicker ways of making clear the intent and modelling of the design. Everyone who has had the experience of making a rendered drawing of a domical building or round tower has learned the inadvisability of inking in the vertical or radiating stone joints without first determining upon a strong contrast between the circular mass and the background and whether the parts which are round in plan will be dark against a light background (Figures 23 and 24) or light against a dark background. (Compare Figures 20 and 21 in November issue.) It is always on the side of safety and expediency to adopt the former method when it is desired to show much detail upon, and also the general effect of, the curved surface to the elevation. Very slight variations of width of line will cause polygonal effect, or detracting from the surface of the mass. Lines which are too strong may cause the merging of the background with the shades or parts of the shadows, so that at a little distance the silhouette is destroyed and the curved surface lost in a maze of patches. Even though the remainder of the drawing be inked in it is best to leave all of the circular part in pencil until the wash

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rendering is finished and perform the retouching with a sharp pencil rather than with ink. A very strong line is needed to define the silhouette of a dome or cupola whenever it is shown light against a dark background, and of any features, especially such as pediment, statuary, or portico in front of it. The amount of strengthening such lines require is always surprising. Make it two or three times as strong as seems necessary, while looking at the drawing board, then stand it up and look at it from a distance of eight to ten feet—and you will probably strengthen it at least once more.

The small illustrations, Figures 20 and 23, serve to compare carrying quality—that which enables the design to be judged without “smelling” it. Figure 21 is reproduced from the same drawing as Figure 20 and Figure 24 is from the same drawing as Figure 23. The cuts showing the actual size of the drawing serve to compare the technique. Figure 21 is the perfectly drawn ink line—which takes much time. Figure 24 is a pencil line drawing with a few of the finer horizontal lines inked in, but with the vertical and silhouette lines put in with a carbon pencil—note how they disappear in the general effect of the small Figure 23. When considering carrying effect, or reproduction at a smaller scale, it will help the beginner in the study of his drawing to use a lens known as a “diminishing glass.”

The heavy outline is of especial importance to define a free standing colonnade, or portico, when much detail has to be shown of the wall behind (Figure 24). In such circumstances, to avoid eccentricities of effect in the columns themselves, flutings, if any, should be shown only in very fine hard lines and the columns be drawn thicker in proportion than they would be desired in actual execution of the design. The shade cast upon the columns requires to be very lightly indicated and when the representation of the column is three inches or less in height it is better to show them straight—that is, without entasis or taper. When the Corinthian Order is employed the capital is thus thickened sufficiently to allow a fair amount of drawing without becoming a black patch or merging into the background. It is inadvisable to ink in ornament upon drawings of less than one-eighth inch scale in any event, except outlines of free ornament, such as the capitals, statuary, etc. Certain of the lines such as those which cast the principal, and darkest, shadows may often be inked in with graded lines to intensify the grading of washes and add to the luminous effect or to hold the architectural lines firmly against shades and shadows which would otherwise break up important surfaces and destroy simplicity.

To assure simplicity and unity the silhouette cannot be too strongly insisted upon. It is probably due to the desire to emphasize such qualities that many draftsmen have resorted to the employment of dark backgrounds against which the building and entourage are shown rather as full-size representations of a small scale white model of the building than as a representation of the building itself. This type of representation (known as “the Acropolis

stunt”) is at its best when nothing but the architecture is shown; when, as with the Acropolis, the building is shown as though standing on a level rock—or the model upon a table—against a large expanse of sky, and without any softening introduction of foliage. This gives the “acid test” to the scale and composition of the architecture but is, therefore, suited only to judgment by experienced architects—actual designers.

The use of the dark background has called forth many clever technical tricks such as the imitation of the graded settling wash—which requires such infinite pains when spread with the brush—by the use of the air brush, and sparkling small mottlings of the large areas of background or foreground by use of the atomizer, or blower. Thus reducing the field of personal technique to the presentation of the building proper.

When one of these blowing instruments is to be employed the parts of the drawing to be reserved for brush work is covered by a template of paper and borders of tracing paper are “pinned” down (for fine drawings use needles) all around the sheet to preserve the white borders. Sometimes the principal shadows and the voids in the walls and any comparatively large space which requires a graded shading, are also put in with the air brush.

In the hands of a skillful operator the air brush can be made to produce wonderful luminous effects. An example of its use for the entourage in conjunction with very simple and beautifully graded washes for rendering the architecture is shown in Figures 25 and 26—Mr. Swartwout’s design for the Wilmington Public Buildings, rendered by Mr. Otto Eggers. As a whole, considered simply as a drawing, and in point of showing technical skill and knowledge of how to execute each part, it is everything that could be asked. Certain facts of relative values of the designer’s compositions are, however, overlooked. The few faults of the design are curiously exaggerated; and faults are made to appear which do not really exist in the design. Thus, the change of proportion of window voids in the projecting pavilions, from that of the main body of the building, are exaggerated by the sharp intensifying of the shadows and detail which cause them to appear narrow and deep, while the windows in the main body are so lightly rendered as to cause them to appear relatively wider, higher and of shallower reveal than is indicated by the lines of the drawing. It is difficult to discover, at a slight distance, much less to realize, the width of the projecting pavilions or the upper limit of their height at the plane of their projection. The two pyramidal roofs which in execution would be low points set back at the intersection of the masses of the building, serving to accentuate the change of direction, appear to project out to the face of the pavilions and cause a top-heavy effect. The hedge which so admirably sets off the balustrade and monumental ornaments, as well as adding brilliancy and a fine decorative line to the composition, as a drawing, reduces the

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Figure 24. Competition Design World War Memorial. Detail of Figure 23 at Actual Size of Original Drawing. Scale 1/16 in. = 1 ft. Francis S. Swales, Architect.



Figure 25. Competition Design for New Castle County-Wilmington Public Buildings. Tracy & Swartwout, Architects.
Rendered by Otto R. Eggers.

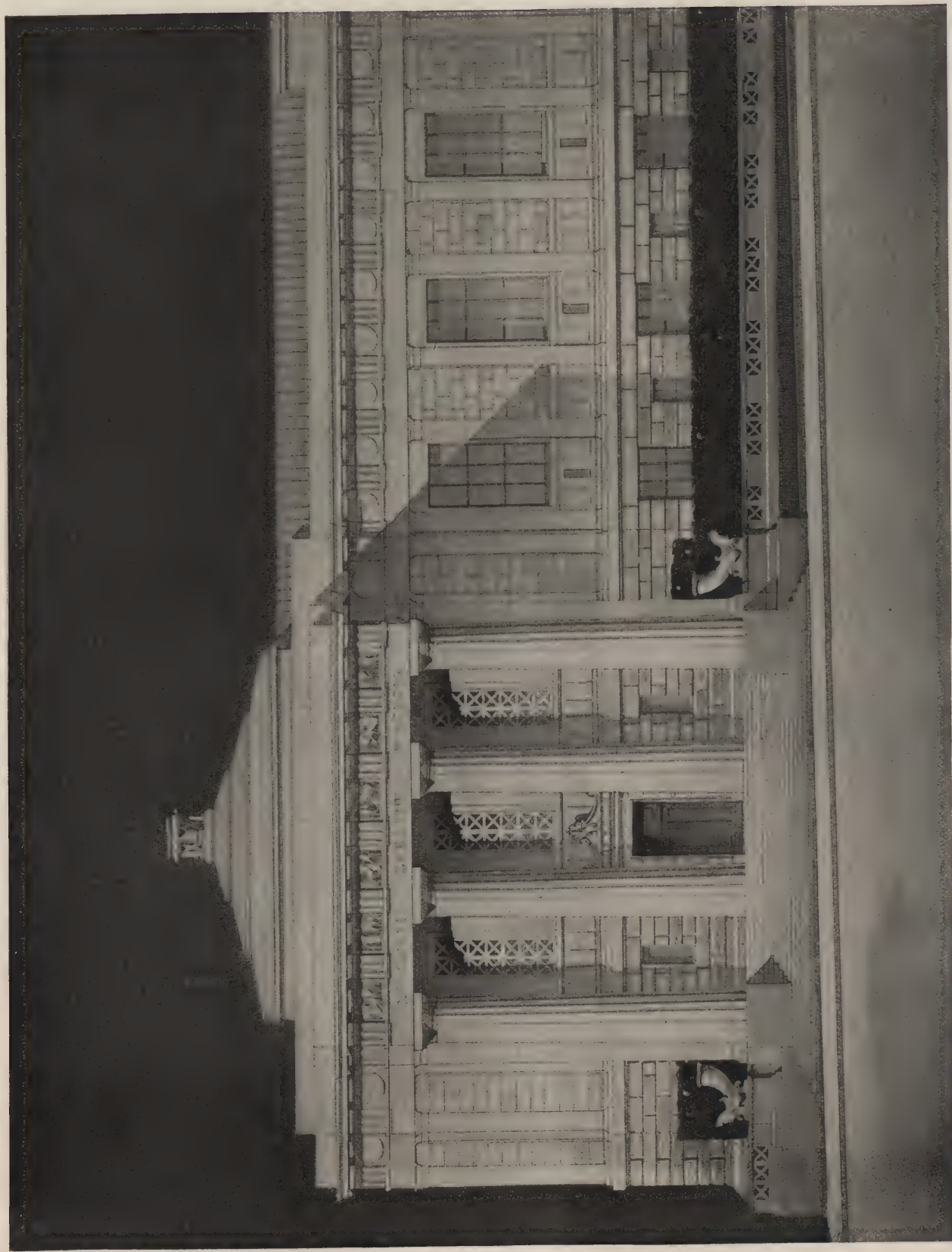


Figure 26. Competition Design for New Castle County-Wilmington Public Buildings. Tracy & Swartwout, Architects.
Rendered by Otto R. Eggers. Detail of Figure 25 at Actual Size of Original Drawing. Scale 1/16 in. = 1 ft.



Figure 28. Detail of Figure 27 at Actual Size of Original Drawing. Scale $1/4$ in. = 1 ft. Competition Design for The Scott Memorial Fountain, Detroit, Mich. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.



Figure 29. Detail of Figure 27. At Actual Size of Original Drawing. Scale $\frac{1}{4}$ in. = 1 ft. Competition Design for The Scott Memorial Fountain, Detroit, Mich. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.



Figure 30. Competition Design for The Detroit Public Library. Cass Gilbert, Architect.
Rendered by Thomas R. Johnson.

effect of height of the ground story which, due to contrast, increases that of the upper story until it competes with the pavilions. This causes the columns of the pavilions to give the queer effect of having jumped down half a story. A strong outline around the projecting pavilions and a wash or two, over the main body of the building, and darkening of the window openings and shadows to same, would have helped give true as well as technically correct effect to the architectural design.

While the discussion of design and composition is perhaps beyond the scope of the title of these articles, no fine distinction can be made as to where fine technique leaves off and fine art begins. How much is due to knowledge? And how much to imagination? How much to reasoning; how much to intuition? How much is experience—how much experiment? An architect is an artist-designer, a designer is a draftsman and renderer. Rendering is the finished, though usually tentative, expression of the artist's conception. When designer and renderer are not the same the technique of the latter is a matter of deep concern to the former. In order to show the designer's ideas with the utmost faithfulness and completeness of detail the draftsman will often employ the finest and most delicate technique of which his hand and eye are capable. Many designers study their conceptions to the minutest details of effect allowed by the limitation of time, and the more scholarly the designer, the more apt he is to study with a fine hair-like line and indicate far more fine detail than should have any purpose in a competition—the main object of which should be to discover the architect with the best ideas, conceptions and solution of the large problem and composition.

When the scale of the drawing or that of the design is large enough, a good medium for the line work, affording some of the advantages of both the soft lead pencil and diluted ink, is the carbon or

lithographer's pencil. It can be sharpened to, and will hold, a quite fine point and produce firm, strong lines that carry, or reproduce, as well as ink lines. Or the point may be dulled and be used like a soft lead pencil to indicate ornament and sculpture; and to shade flat washes into the effect of graded washes. An excellent example of such drawing is the elevation of Mr. Cass Gilbert's design for the Scott Memorial Fountain at Detroit (Figures 27, 28 and 29), drawn and rendered by Thomas R. Johnson. The drawing generally is conceived as the representation of a model; but the indication of water compels naturalistic presentation of that part of the design: the jets being complementary to the architecture in the conception of the whole.

A light toning wash of ivory black covers the whole of the rendered surface. The background is put in with three, dark, graded washes. The water jets are partly taken out with an ink eraser—used after the background had dried. The big central column of water is retouched with a thin wash of pale yellow tinted *gouache*. The small radiating jets are of Chinese white, rather thick, and put in with swift strokes of the brush which cause the white to break against the rough surface of the paper, giving much the same effect as the actual water jet breaking in the air. A very light tone of yellow is passed over the water in the foreground, and the ripples of the surface are made with long, swift brush strokes, retouched, very lightly, with carbon pencil. The principal shadows on the basins and over the panels of ornament are pale washes of ivory black with the merest suggestion of yellow in the tint. The shading, which is held darkest at the center and disappears towards the sides—thus leaving the parts against the background practically white—is done with carbon pencil, with a light, firm stroke which loses itself in the tone. The silhouettes of the principal mass of the fountain and of the free ornaments—the lions, vases, etc.—are retouched with a sharp, firm carbon pencil line.

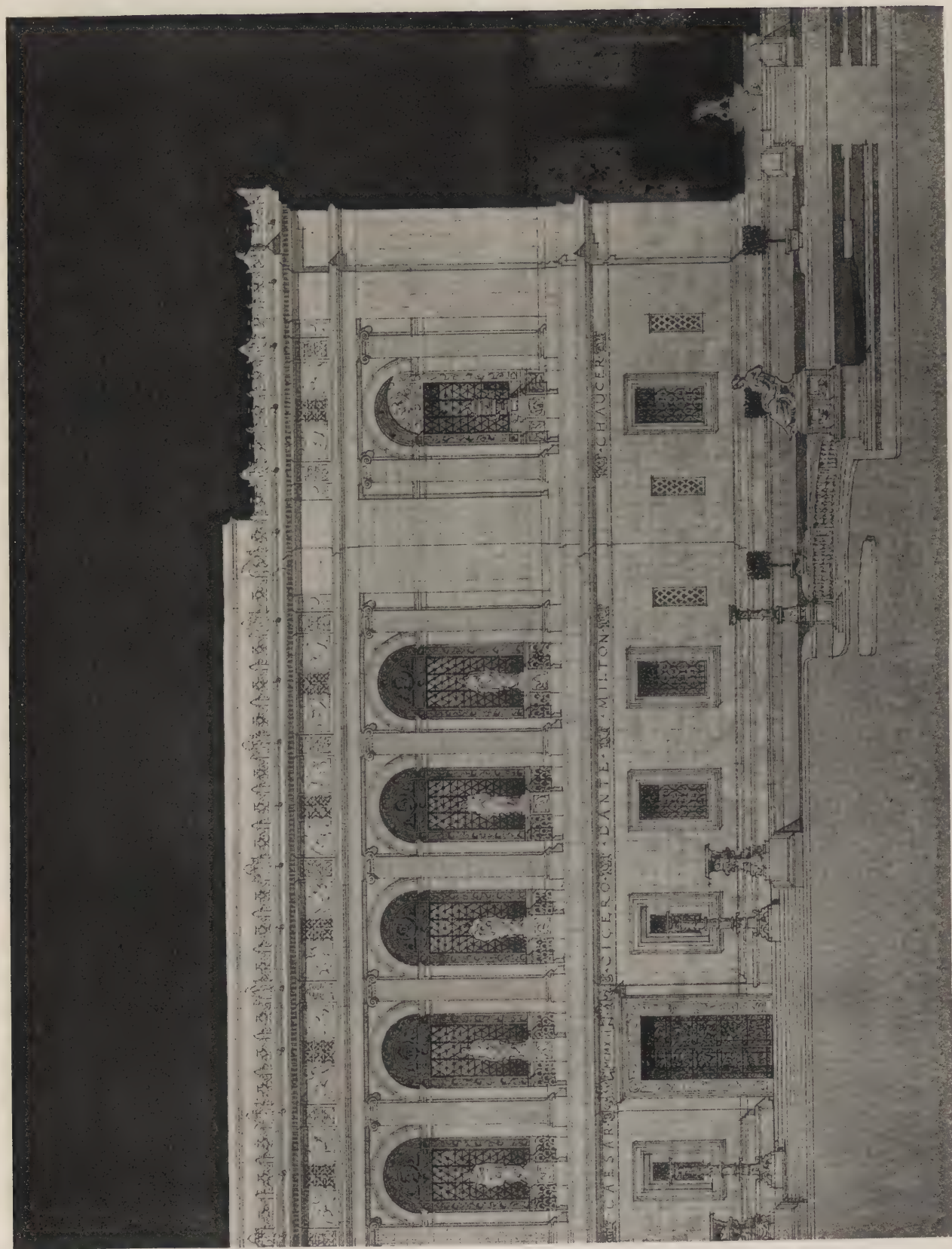


Figure 31. Detail of Figure 30. At Actual Size of Original Drawing. Scale 1/16 = 1 ft. Competition Design for the Detroit Public Library. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.

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Figure 33. Detail of Figure 32 at Actual Size of the Original Drawing. Competition Design for The Waterbury City Hall, Cass Gilbert Architect. Rendered by Thomas R. Johnson.

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The silhouette line of the upper edges of the bowl and upper stage of pedestal basins is made by the ragged edge formed by running two or more heavy washes up to the same line. Great artistic feeling is shown in the indication as well as in the rendering, both of which are in full sympathy with the character of design. Four very light grades of tone, becoming still lighter as they recede, are used to indicate the four steps, or stages, of the fountain.

For workmanship that seems to be an extension beyond the limit of human patience and skill in extreme fineness of technique are two other of Mr. Gilbert's designs, drawn and rendered by Mr. Johnson: the elevations of the winning designs in the competitions for the Detroit Public Library and Waterbury City Hall. The Detroit design, Figures 30 and 31, is a pure "India ink" drawing—every line is inked in perfectly and even to the flutes in the pilasters and the ornament on the wall under the arcade. The only toning is an almost invisible tint of pale yellow, quickly graded out from the base line upwards. The sense of atmospheric toning and "aerial perspective" are as perfectly felt as they are rendered. The decorative treatment of the drawing as a whole, the very subtle gradings of the washes (almost certain to be lost in reproduction with printer's ink and pulp-paper), the notable sense of color values all go to show technique at its peak, and something more than technique—the

imagination of a very able artist at work. The rendered area of the drawing is $8\frac{3}{4}$ in. x 23 in. The drawing of the Waterbury City Hall (Figures 32 and 33) is at least equally fine in technique. Brick joints, sash bars, iron balconies, and the gates and railing shown against the dark background are, however, put in with Chinese white. The idea of representing a small model of the building rather than the building itself is the convention adopted. Note that the window openings are graded by stories from a dark, in the ground story, that is much lighter than the background but darker than the brickwork, to a light value in the top story that is lighter than the lightest part of the brickwork. The silhouette of the design is firmly marked by placing the lightest or "whitest" parts against the dark background. The background is graded from the ground line upwards, but the gradation counts but little in the effect. The brickwork is graded downward from the top story and meets the light tone of the stonework of the lowest story without the usual "jar" felt in most representations of red brick and light stone combinations. The *piquage*, in white, is maintained all over the surface but with such delicacy as to require the closest scrutiny to detect it. The rendered area of the drawing is only $9\frac{1}{2}$ in. x 17 in.

(To be Continued)



Figure 32. Competition Design for City Hall, Waterbury, Conn. Cass Gilbert, Architect.
Rendered by Thomas R. Johnson. (See detail on page 32.)

DETAILING STONE WORK

BY J. R. S. SCOTT

PLANS are prepared, tenders are taken, contracts are let for the stonework. At this stage the stone draftsman appears, and much depends on how he interprets and carries out the design. In his way he is just as much interested in doing his part of the work and seeing it executed to the satisfaction of everybody as is the architect himself.

Stone, of one kind or another, is among the most important materials applied in quantity to the exterior of a building, and on that account the detailing of it deserves the most careful study. Up to a comparatively few years ago it was cut almost entirely by hand at the job, and on this account and because it has no fixed unit of size it was a simple matter to introduce any last-minute changes. With the present general use of machinery for sawing and planing the conditions are quite different, and the drafting is begun weeks before delivery is required, making alterations discouraging, difficult and expensive.

Often it is not what the architect fails to show that presents difficulties, but what he does show. In a stone mill of any size there is more stonework laid out and detailed in a year than many architects turn out in a lifetime. The stone draftsman must study it out for himself, for he cannot leave it to the next man to work out. Necessarily, therefore, he is well enough trained and has had a broad enough experience to be quite competent to lay out and make details for any part of the work where the architect has not seen fit to supply them. It is when the specification calls for sizes and sections that will not work out, or when the details are hazy, that most trouble arises, and one or two such points raised here may not only tend to correct them on the next job but ease the draftsman's path in other directions.

In the working drawings it is usual to show scale-detail sections of walls and other features. Often the section drawn is taken through an apparently tricky little place that actually will work itself out almost automatically, while nothing is shown by which the sill, lintel, cornice or coping construction can be determined; and these are always important. Or if one window is shown, the one beside it, of a different character, is omitted, or there isn't room to show the door. Often a section is made through the blank wall—it shows the water-table, perhaps, and omits the window and door.

It is usually in stone trim work that most trouble arises. If the entire wall is of stone, the draftsman has a chance to manipulate the jointing and details so as to make everything fit, but not so with a trim job. In such work it is customary to make the stone joints line with those in the brickwork. How often does the architect omit to give the brick sizes or neglect to figure his sizes to fit the lay of the bricks? Tables and scales giving multiples of various brick heights are available; if not, one can

easily be prepared and blue prints supplied to every draftsman. By working out the heights to brick sizes the architect gets better work by saving the splitting of bricks, and also gives the stone draftsman an opportunity to check the dimensions; a figured height of 7'-0" may be right or wrong, but if it is 7'-1 $\frac{1}{4}$ ", with the brickwork running four courses to 11", the draftsman has reasonable assurance that it has been worked out and is correct. The growing practice of indicating heights by the number of brick courses is of great assistance.

In figuring heights it is customary to locate the dimension points at the centers of the joints. In theory this is correct, and the smaller joint for stonework (at quoins for instance) should have its bottom a little higher, and its top a little lower, than the larger joint in the brickwork. In practice, however, this is almost out of the question; the stone is set, the line is stretched across from its top bed, and the brick is laid with its top bed to the line. The bricklayer will never bother to measure down from the top of the stone the one-eighth or three-thirty-seconds of an inch, or whatever is half the difference between the thickness of the brick mortar joint and the thickness of the stone mortar joint, and lay to that.

What at first might be considered a neater arrangement for quoining would be to make the wide quoins line with the bricks, i.e., to make the height from wide quoin to wide quoin equal to x times the height of a brick and its joint + one more brick joint. The trouble is that in irregular quoining, a quoin of a certain length might in one position be narrow, in another wide, and in a third it might be narrow when compared with the quoin above and wide when compared with the quoin below. This would mean three different heights for practically the same stone, with confusion to the draftsman, in the mill, and on the job. Moreover, this system will not work at all with stones oblong in plan, where the face makes a long quoin and the return head makes a short quoin.

Figures should, therefore, be taken from top bed to top bed. This method conforms to the actual operation at the job and solves most of the stone draftsman's problems as to whether or not the joint is to be included. By way of exception, cases like that of the daylight opening from sill to soffit of lintel should not be figured in this way but should have the one extra mortar joint added.

The three average dimensions of the brick to be used should be furnished, together with the size of the brick mortar joint. When the stone draftsman knows just where he stands, not only with respect to the heights, but in connection with the exact projection of piers and pilasters, the correct sizes for chimney caps, the reveals of doors and windows, or the face measurements of piers. It is a needless expense to clip a brick in every course in the

(Continued on page 64)



Courtesy of the American Hellenic Society

THE ERECHTHEUM FROM THE WEST

Frederick Boissonnas

One of the remarkably fine photographs of Greek architecture which formed a feature of the exhibition sent to this country by the Greek Government is reproduced on the other side of this sheet. Other photographs in this series were reproduced in the October and November issues of this journal. Frederick Boissonnas who made this view is widely known as a distinguished photographer. He resides at Geneva, Switzerland.



DETAIL OF PORTAL, ROUEN CATHEDRAL
FROM "SELECTED MONUMENTS OF FRENCH GOTHIC ARCHITECTURE"

A remarkably fine photograph of Gothic detail is shown in the plate printed on the other side of this sheet. This plate is from "Selected Monuments of French Gothic Architecture," a book which will be issued shortly by the publishers of PENCIL POINTS. This book consists of one hundred plates carefully selected with a view to their usefulness in the drafting room and as good examples of French Gothic Architecture. These plates have been chosen from the archives of the Commission on Historic Monuments and from "Cathedrals of France," prepared under the direction of the Commission and of the Ecole des Beaux Arts.



Courtesy of Kennedy & Co.

ST. AIGNAN, CHARTRES: FROM AN
ETCHING BY D. Y. CAMERON

It is always a pleasure to present one of D. Y. Cameron's etchings, and the one reproduced on the other side of this sheet is of more than usual interest. In this plate, as in reproducing other etchings, special care has been taken to preserve the qualities characteristic of the etching process,—the richness of the blacks, the luminosity, and the suggestion of translucence in the paper.



THE TOWN GATE
SEMUR-EN-AUXOIS

PENCIL SKETCH BY SAMUEL V. CHAMBERLAIN. THE TOWN
GATE, SEMUR-EN-AUXOIS, FRANCE

On the other side of this sheet is reproduced a pencil sketch which Samuel V. Chamberlain, who is now abroad, has sent to PENCIL POINTS, keeping a promise he made to this journal before he sailed on his present trip. It is an interesting drawing from the standpoint of subject matter as well as that of pencil technique.

THE SKETCH PROBLEM

BY JOHN F. HARBESON

In this article Mr. Harbeson treats the sketch problem in the same manner in which he has discussed other problems in the pages of this journal under the general heading "The Study of Architectural Design." This article will be followed by one on "Competing for the Paris Prize."

THE schedule of the Beaux-Arts Institute of Design has not only the "projet," but there is also the "esquisse-esquisse" or sketch problem. The "projet" we have seen is a problem to which from three to six weeks' time is allowed; for which a scheme or "parti" is set down in sketch form in the "esquisse"; this "parti" is then developed and studied by means of many successive drawings under the guidance and regular criticism of the "Patron," who has been all through a training of this sort some time before; and then the solution is presented in fairly elaborate and carefully drawn and well rendered drawings. For the projet "documents" and information of all sorts are used in the study.

The sketch problem is quite different. It is done in a few hours—usually only nine—and without criticism or advice, or the use of documents; and within these few hours there must be formulated a solution to a program—like the esquisse for a regular projet; but unlike the esquisse this solution must be "presented," that is, rendered to give an effect.

As we have said before, making the esquisse for a projet develops the power of quick, right thinking, for one soon learns that with an esquisse that does not contain a solution to a problem, no amount of care or study in presentation will make a first class projet; the sketch problem develops this same faculty, for here again a solution must be found for a problem, and only a small portion of the nine hours can be used for finding a "parti." Therefore a good "parti" must be found quickly.

Sketch problems may be roughly separated into two divisions, of

which the plan sketch problem is mentioned first because it is the more important and the more difficult. In these problems elevation and section are explanatory only. There are a few plan sketch problems in Class B. In Class A, there are many and these are elaborated; and they become quite elaborate—difficult—in such competitions as that for the Warren Prize, for which a longer time is given, it is true, but where the program is complicated and difficult; in this competition criticism and documents may be used, however. This type of problem culminates in the second preliminary competition for the "Paris Prize," a forty-eight hour sketch problem that is a severe test of ability in thinking out a scheme—solving a problem—and in presenting it in a telling way. We shall consider the plan sketch in the next article.

The other type is the decorative sketch problem, usually requiring an elevation or perspective of a small composition with an explanatory plan at small scale. This starts in Class B with such simple problems as those shown in Figures 1 and 2, includes the Spiering Prize Problem (Figure 3), and is continued in Class A with more complicated problems of a similar nature, such as Figure 4, and in such problems of interior decoration as Figures 5 and 6. The Pupin Prize problem is of a decorative nature; for this, like the Warren Prize, more time is given and criticism and documents may be used.

The first preliminary for the Paris Prize is a problem of this kind—a test in the handling of the elemental forms of architecture of good proportions, and in presentation—Figure 7 and Figure 8. Those who go to Paris to take the regular examinations for

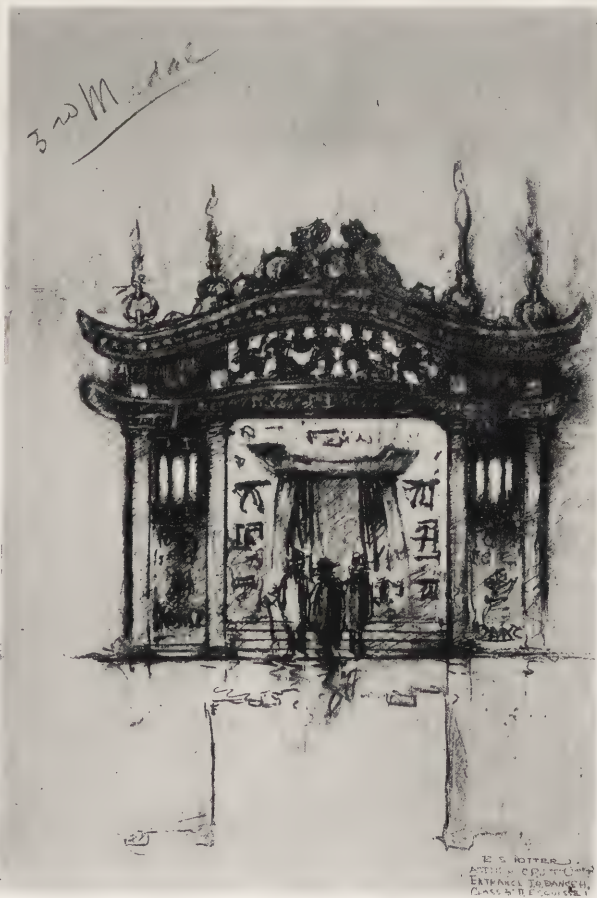


Figure 11. Class A Esquisse-Esquisse, "The Entrance to a Dance Hall," by R. S. Potter, Atelier Cret, University of Pennsylvania.

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entrance to the *Ecole*, find the test in design is a problem of this sort (Figures 9 and 10). In these a direct elevation, a plan and a section of some small architectural form are required. The authorities of the Paris school thus make proficiency in the sketch problem a requisite for entrance to the school—for any further study. As only a definite number are admitted to the *Ecole*, and as those who fail at one test usually try again at the next examination, the competition becomes very keen; so keen, in fact, that there are various ateliers in Paris that are filled with men preparing for this examination, taking sketch problem after sketch problem on programs similar to those used for the entrance examinations, so that when they come to take the examination itself, they have learned just what to do to use their time to the best advantage.

The sketch problem forms habits of quick thinking; it also develops facility in presentation, and both of these are of great value in work on the projets. It is a necessary part of any student's training, doubly necessary if one hopes to become a logist for the Paris Prize, the surest test of proficiency in Beaux-Arts training. If a student ever expects to enter the first or second preliminary competitions, he must take as many sketch problems as possible. One cannot make a good sketch problem on the first attempt—to do them well means to do them often, for this is the only way to learn how to make the most of one's time, how much time may be used for finding a scheme, and still leave enough for the presentation. These things cannot be determined while doing a sketch problem; there is not sufficient time. It is a mistake to think of the sketch problem as a matter of trickery, of indication; but there are conventions and methods of presentation that are different from those used in a regular

problem, and these must be learned—the technique of the sketch problem.

Usually if you have an idea you can visualize it—can see it among a few lines on the paper. But it will take more lines to express this idea to some one else—and more and more lines—up to a certain point—will help to express the idea to an outsider. Beyond this point more lines will only complicate and confuse the idea. The *esquisse-esquisse* must make a picture. It must also express your idea, your solution of the program, to some one else—to a stranger.

There are two things we must do then. First, we must conceive a solution to a given problem—quickly; second, we must “get it across”—present it in a convincing way in an incredibly short space of time.

Let us consider the decorative sketch problem: a man who has done a number of them usually has evolved a system, a technique of his own, based on his knowledge of his own talents and ability, that works out well for him, brings him results. If it does not do this, he will be willing to consider trying other ways of doing it. And the man who has done few sketch problems may find a great deal of value in a method of procedure that will help him arrange his time and use his talent to the best advantage until such time as he will have developed his own “system.” If we take a Class B sketch problem then, such as the “flower market” of Figure 3, it is well to do it in this way, remembering that we start with an empty paper and a program, and must turn in, nine hours later, a well presented solution to the problem.

We speak of the Class B *Esquisse-Esquisse*, for the Class A sketch problems are a part of a progres-

(Continued on page 60)



Figure 12. Design for “A Gate Lodge” by Lionel Pries.

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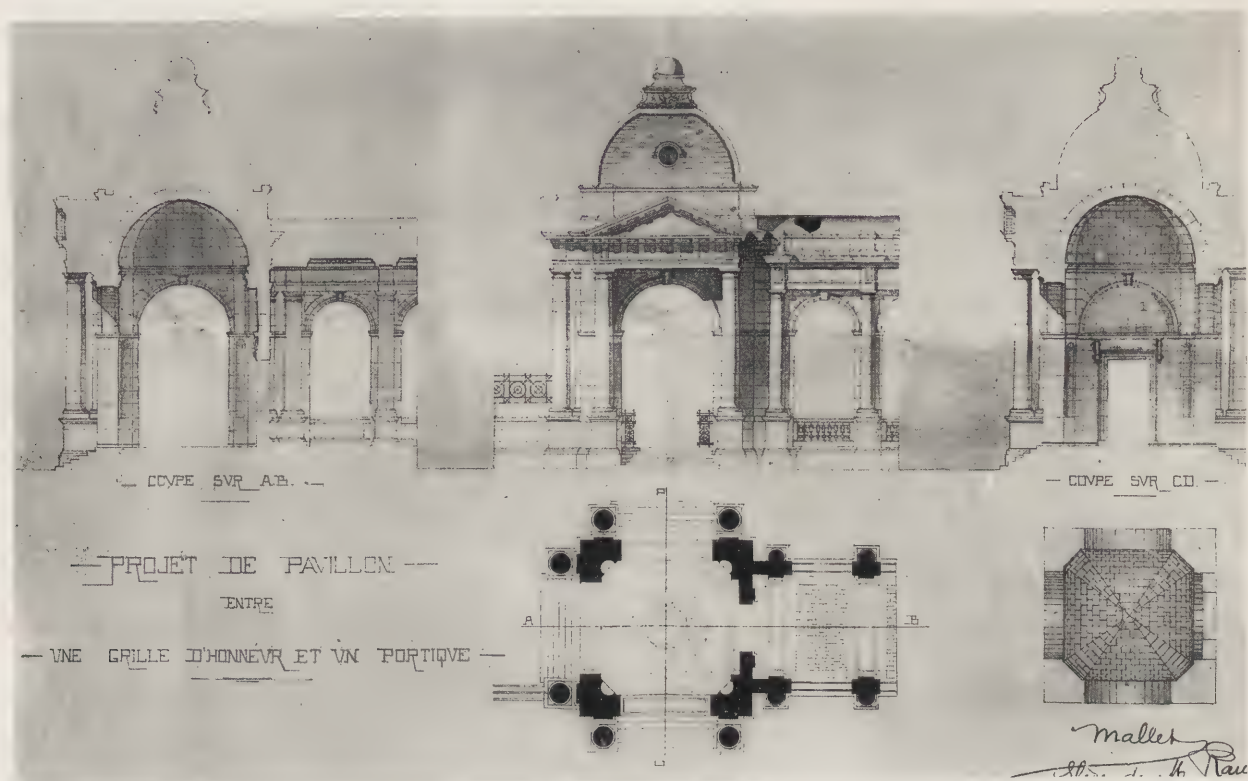


Figure 10. Admission Drawing, Ecole des Beaux Arts, Paris. By M. Mallet, Pupil of M. Raulin.

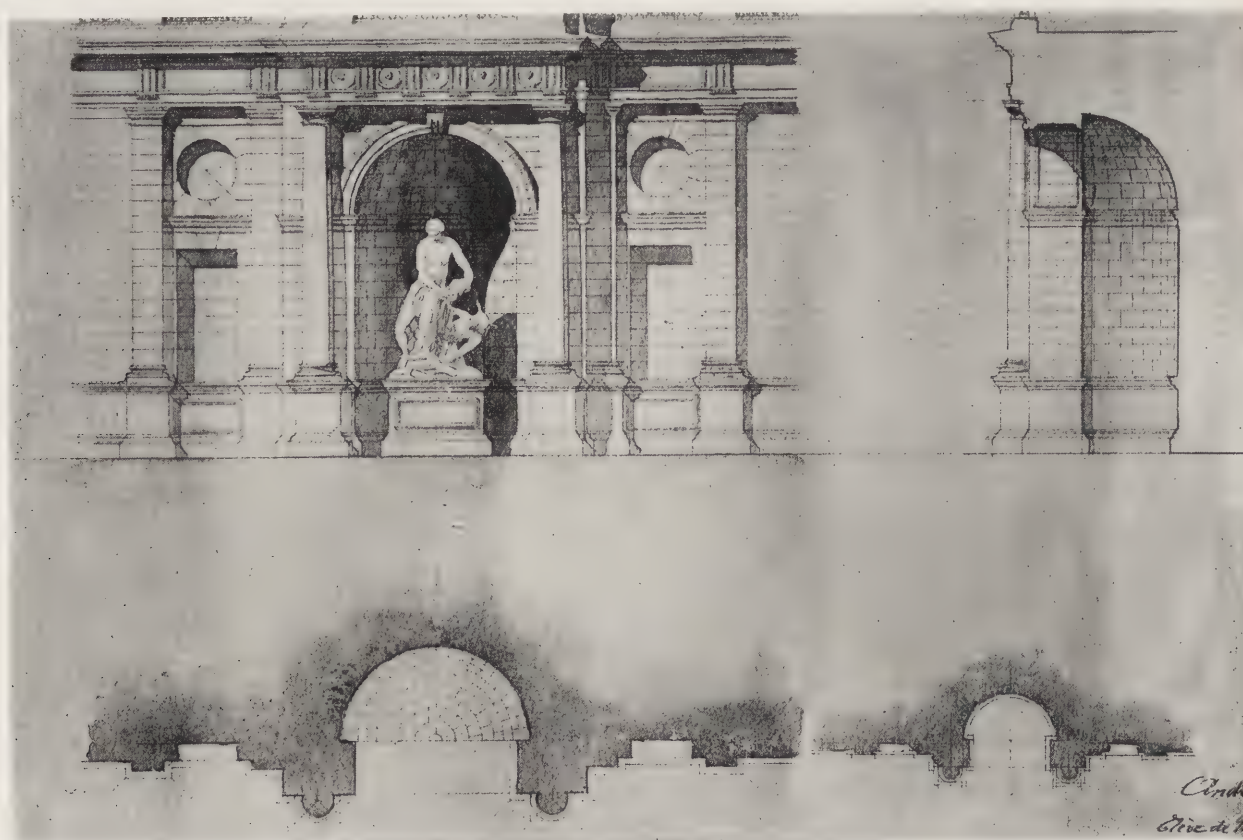


Figure 9. Admission Drawing, Ecole des Beaux Arts, Paris. By M. Dassier, Pupil of M. Laloux.

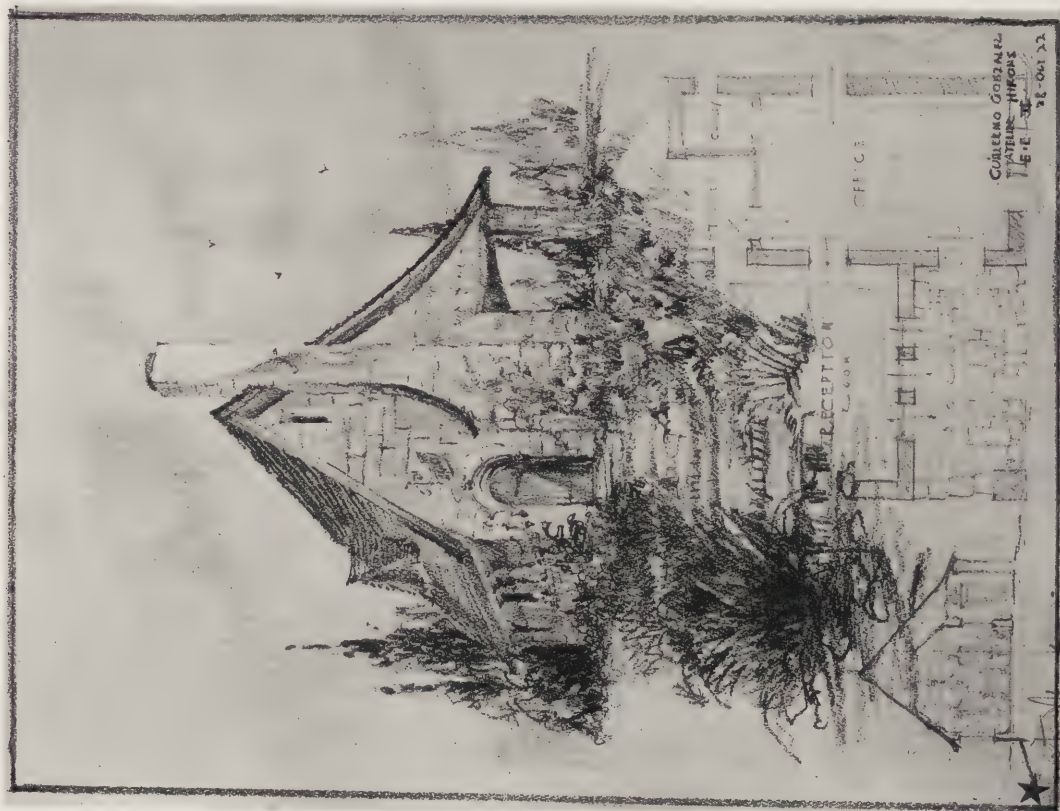


Figure 1. Class B Esquisse-Esquisse. "A Real Estate Office in the Country." By G. Gonzalez, Atelier Hiron, New York.

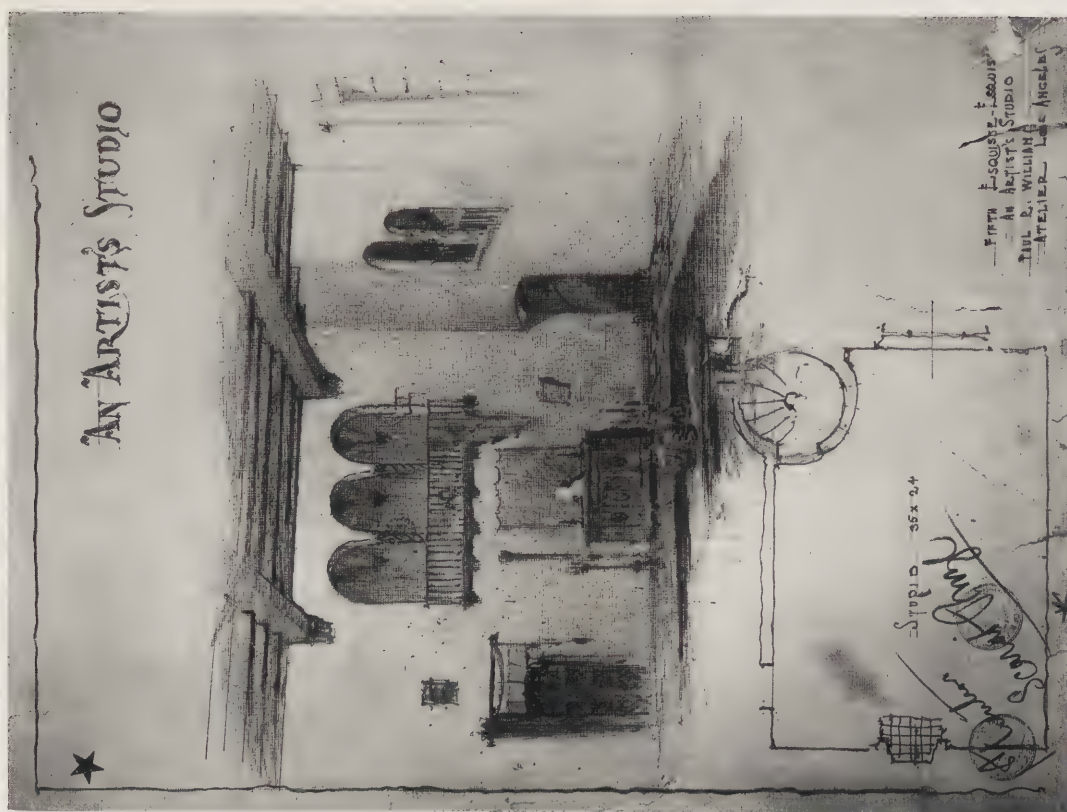


Figure 2. Esquisse-Esquisse. "An Artist's Studio." By Paul R. Williams, Atelier Los Angeles.

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Figure 3. "The Garden Façade of a City House."
By C. B. Lewis, Yale University.

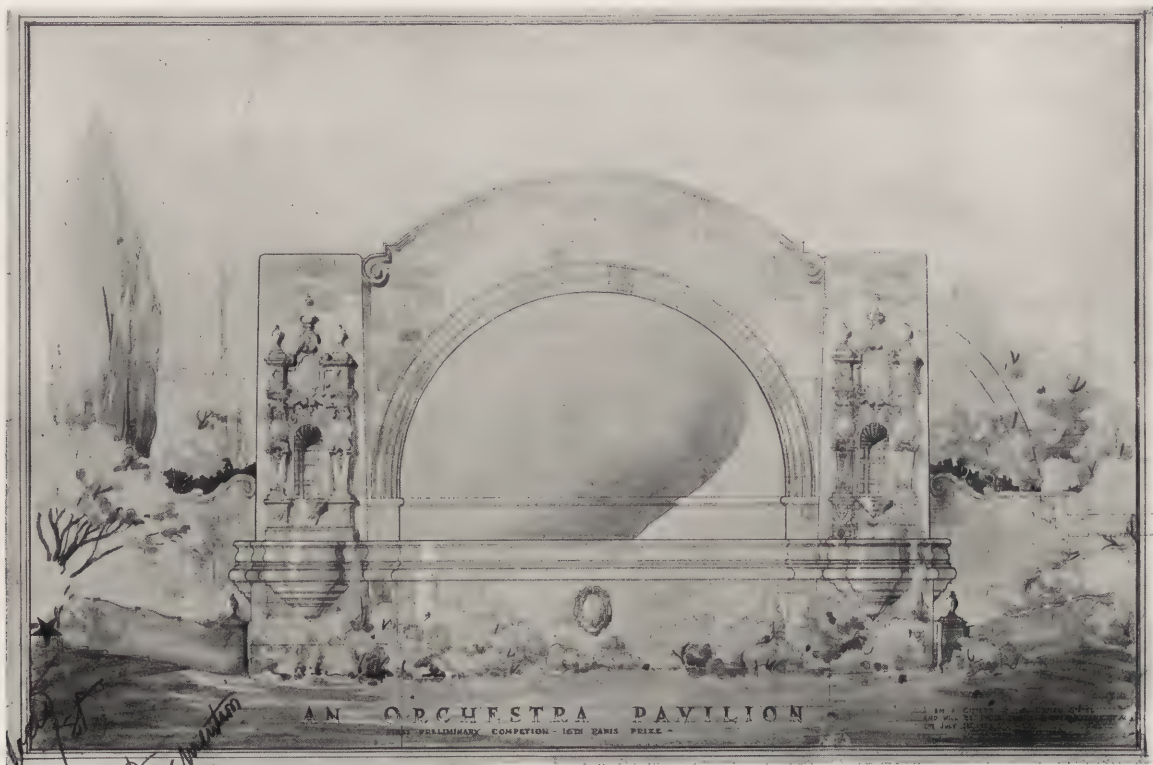


Figure 7. "An Orchestra Pavilion." By P. O. Davis, Los Angeles Architectural Club.
First Preliminary Competition for the Sixteenth Paris Prize of the
Society of Beaux-Arts Architects.

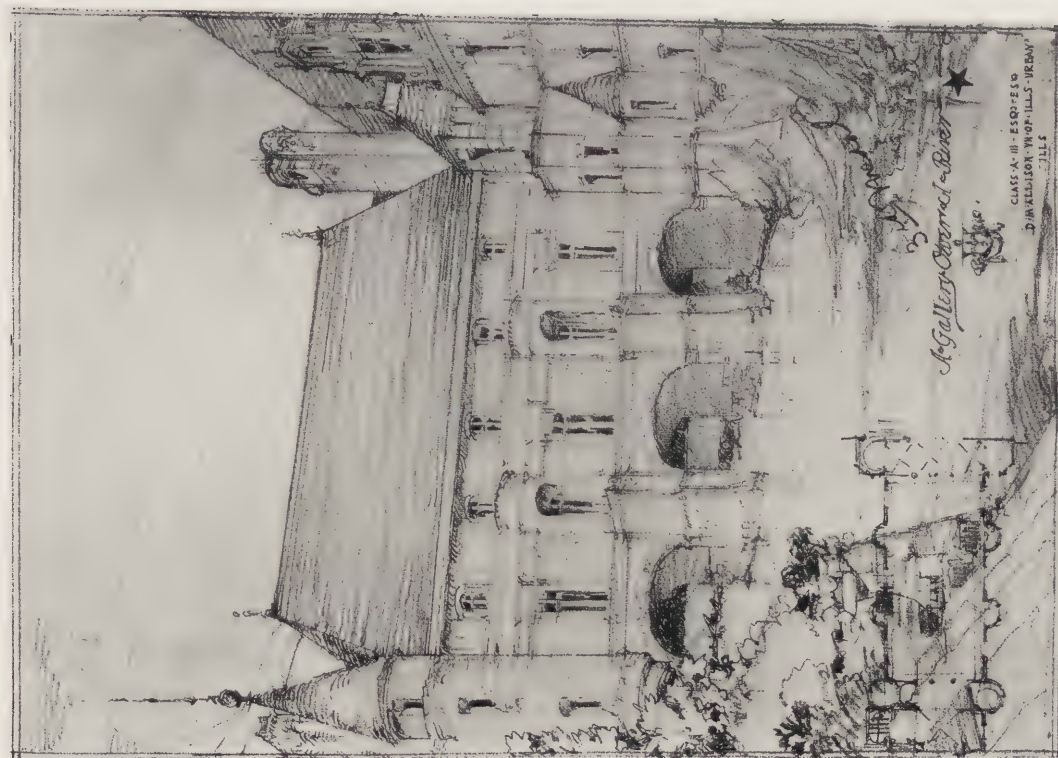


Figure 4. "A Gallery Over a River." By D. M. Allison,
University of Illinois.

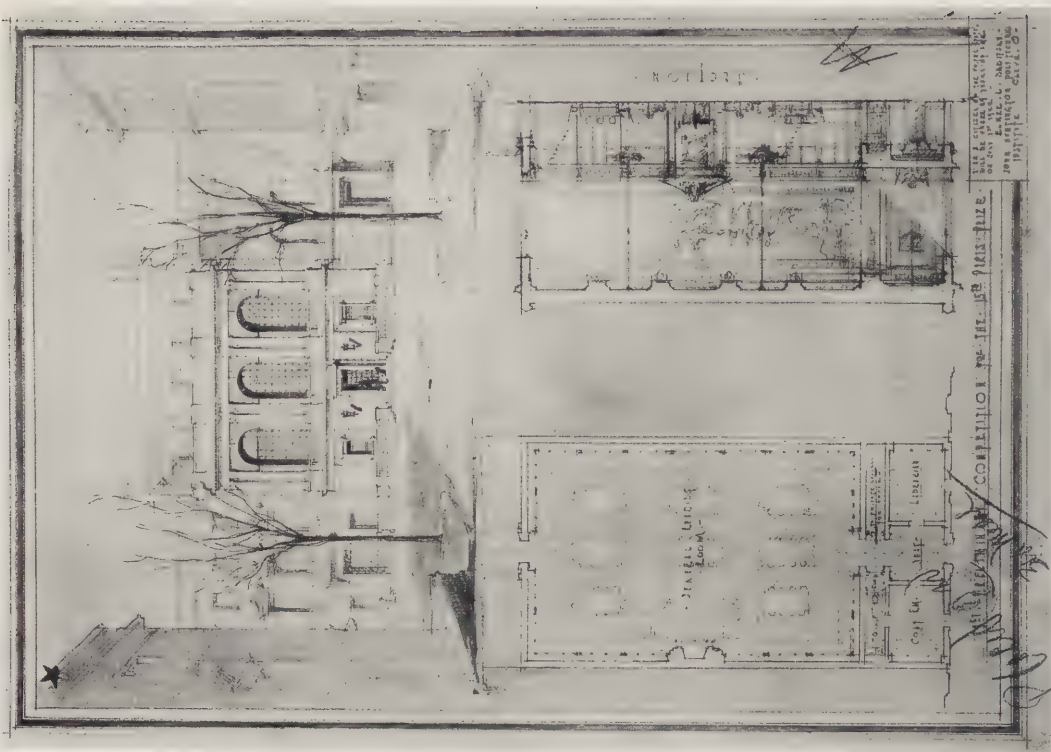


Figure 8. "A Private Library." By Elmer L. Babitsky,
John Huntington Polytechnic Institute.

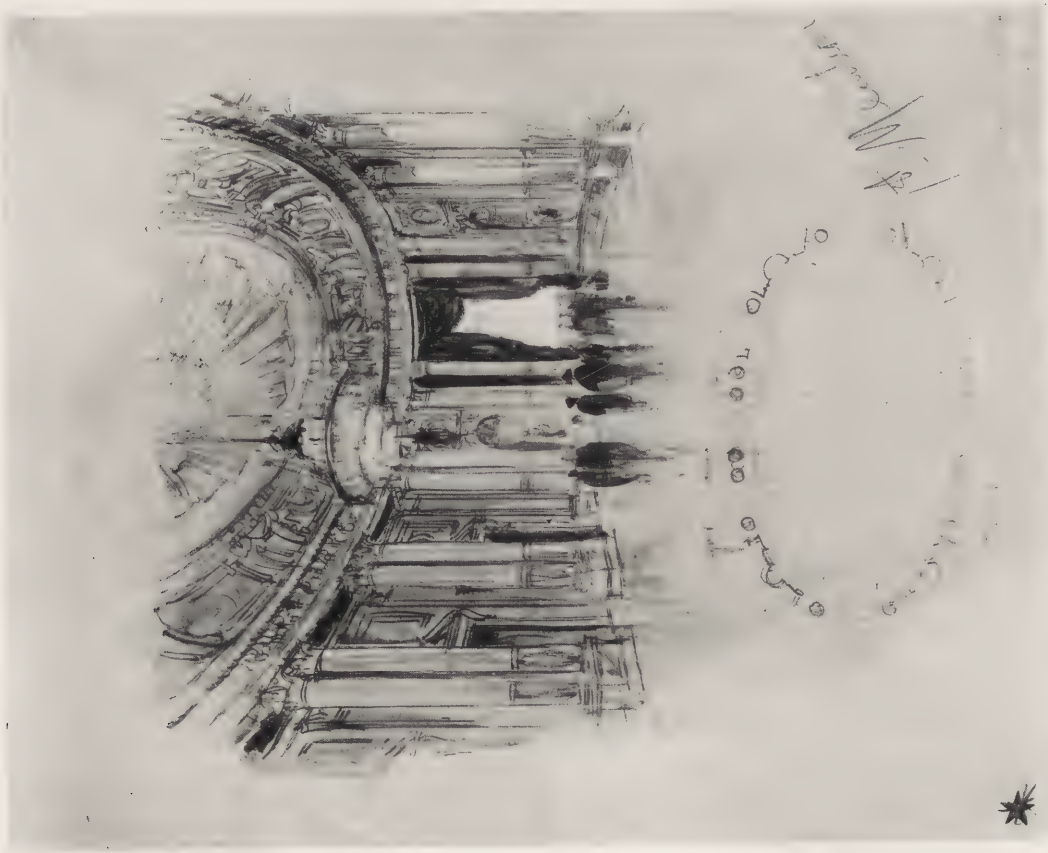


Figure 6. "A Reception Room on a Steamship Pier."
By Elmer L. Babitsky, Atelier Wynkoop, New York.



Figure 5. "A Ceiling Decoration." By T. E. Ash,
T-Square Club, Philadelphia, Pa.



Figure 13. "Un Pavillon pour Une Source d'Eau Thermale." By M. Carlu, Pupil of MM. Duquesne and Recoura. Ecole des Beaux Arts, Paris.

DESIGN IN THE DRAFTING ROOM, PART II

BY JOHN C. BREIBY

This is the second installment of a new article in which Mr. Breiby goes back of the subject "The Making of Working Drawings," which he has treated in recent issues, and discusses the preliminary study that precedes the beginning of the working drawings. In this installment Mr. Breiby discusses elevation study particularly. Mr. Breiby is a member of the organization of Carrère & Hastings, Shreve, Lamb & Blake.—Ed.

SUCCESSFUL designing can be attained only after a thorough analysis and earnest criticism of the design problem to be solved. Self criticism is perhaps the most important guide for the artist or designer to follow. The spirit of self criticism is the ever-willing voice which will whisper to the mind praise, when praise is due, or rebuke when deserved. Its warning voice is like the refiner's fire which separates the gold from the dross. The designer does well to take heed of the warning which comes from within. Criticism, by persons qualified to give it, should always be taken as the helpful and kind expression of a friend.

Anyone can criticise, but everyone cannot criticise justly and wisely. Personal opinions, desires and tastes differ with each individual and these traits will color the advice and suggestions given. Never offer a destructive criticism and leave it at that; do not allow personal opinions or feelings to take such an upper hand so as to shut out another viewpoint. Never belittle the work of another. Always be ready to rebuild and strengthen, if need be, that which by necessity has been torn down. Co-operative discussions, suggestions (if sincere) and criticisms are the stepping stones to good design.

In the working out of any composition, the artist or designer usually feels a sense of self-satisfaction (this feeling should by no means be quenched); the danger, however, is that the composer is often carried away in thought to a

high state of ecstasy, even at times to the exclusion of sound judgment. This feeling of ecstasy, when used to advantage, is the very reason why the first "snap judgment" of a problem will often be the

final solution or—as expressed in part in the editorial of the November number of PENCIL POINTS—"A man's first reaction to a problem is often the best." As a check, when the imagination has a tendency to become more or less rampant, it is well to lay the problem aside for a time, even if necessary to forget it or "sleep on it," to express it in slang. It is remarkable, when work on the problem is resumed with a rested mind and refocused vision, how many interesting and necessary modifications or means of disentanglement will unfold themselves. This is a part of the work of self criticism. There is no need to describe in detail how valuable are the judgment and criticisms of others whose different viewpoints, fresh thoughts, and rested eyes can always help to detect faults and render helpful suggestions. As pointed out before, such suggestions to be of value must be unselfish and not partial.

Architecture has developed by means of traditional and progressive criticism either for aesthetic or practical results and reasons. Aesthetic criticism is a hidden indescribable gift which arises from within, and this gift makes itself known purely through the attribute of the power to feel emotions. Truly enough, laws and rules are given for basic effects de-



Figure 6. First Sketch for an Elevation by the late John M. Carrère.

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sired, but such laws and rules are very flexible and even though some given law is followed for that which is pleasing to see, the beauty resulting is felt not merely because a particular law is followed, but because the effects stir or set in motion the faculties within, which find the result good. Aesthetic laws or rules are, therefore, not laws of formulas or calculations.

As an example, the architects or master builders of the early historic periods, who had in turn inherited aesthetic rules from their predecessors, developed a definite method for obtaining the entasis on a column shaft. They discovered the reason the column would appear more graceful and refined; if given an entasis which among other things overcomes certain optical illusions and gives a sense of life that is lacking in columns shaped as true cylinders throughout their entire height. Again, in designs of architecture of the Classic periods we find rules in which practically all proportions, all relative divisions of detail are based upon the unit of or parts of the unit which is established by the radius of the column shaft, measured just above the base, now known by the term of "one module." We accept these rules without question, because they please us. In so doing, therefore, are we not

of like nature with the ancients and heirs to their kingdom of thought, aesthetic emotion and visual vibrations? In working out design, this aesthetic inheritance is the great force which unconsciously guides the mind and eye in the seeking of that which is good. The wonders of nature itself offer a splendid opportunity for the study of proportion, mass and color, as revealed in the human form, in the lower animals, in vegetation, in the formation of rocks and crystals—in short, nature's creation is a work of beauty.

Architectural design then is a work of adaptation of the written and unwritten laws for aesthetic values, applied to the actual casting and moulding into shape of materials which are to be used in building construction. Even purely structural design of practical and sustaining materials calls forth these same feelings. It does not require much experience to train the mind and eye to judge whether a structural column or beam appears too light or too heavy for the particular load or work imposed thereon, or whether a wall appears thick enough for its height or length, etc.

The proper use of materials has a purely aesthetic value (even though this may be for absolutely practical reasons), for instance, to give a



Figure 7. Portion of a Study for an Elevation by Thomas Hastings.

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rather crude example: It surely would not look proper and right to support stone work upon wooden posts, even though the wooden columns were designed for sufficient strength to do the work required. The reason for this faulty relationship is obvious. The lasting qualities of the stone and comparatively short-lived nature of the wood will clash in the expression of varied durability. The materials may of course be painted to imitate each other, nevertheless the different vibrations will stir up the feeling of inequality and will not appeal to our sense of fitness and therefore are not of beauty. Improper uses and relationship of materials are too numerous to mention. To avoid conflict between materials, great consideration must always be given, as it is a part of the work which has made architecture a fine art.

As structural steel has to be protected from the action of atmospheric moisture, gases, and also from fire, which attack and structurally weaken this material, protection must be provided and the method of protection, and materials to be used, are usually determined by building ordinances and good

practice. Concrete, terra cotta, brick and stone are the usual structural steel protective materials (the rust proof paint required will not be considered as architectural design material), it will then be perfectly good architecture to enclose the steel with and in the character of design which the selected material calls for. So if the protection is to be of stone, the character of architectural stone column of classical proportions may properly be adopted.

Architecture differs from all other fine arts, owing to its nature of being constructive not merely to the mind and eye, but also meeting the practical requirements of human life. No matter how beautiful a painting or tapestry may be, it would be utterly impossible to clothe a building therewith, and call it architecture. This would be unfit for the beauty of building design. The enclosing of a structure by suitable and lasting materials will always be a subject for deep study. Constantly new materials and building requirements are being developed which will all have to find their proper places in the art and science of Architecture. Among the many features for architectural study, com-



Figure 8. Enlargement of a Photograph Showing a Building to Which it Was Proposed to Erect an Addition.

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Figure 9. Photostat of Enlargement Shown in Figure 8, Upon Which a Perspective of a Proposed Addition to the Original Building Has Been Drawn. Theodore E. Blake, Architect.

paratively recently introduced to meet modern demands, are the large show window, the fire escape, the revolving door, the smokestack, etc.

Perhaps one of the most interesting recent developments is that of the zoning and height of building regulation. This meets a long felt want, especially for the larger cities. In the smaller communities a step to enforce similar regulations should be taken before such laws will become an absolute necessity to safeguard the well-being of the growth of building operations from a standpoint of beauty, safety and utility.

The work of design in the drafting room is not merely the study of proportion, scale, color, etc., for beautiful architectural effects, but the most important work is to fit a beautiful architectural composition to requirements, and demands, which are at times very prosaic and precise. The required sizes of window openings may often be given, and for certain classes of buildings a definite size is required by law, and these definite requirements may not permit one to design to the best advantages for architectural composition. The difficult problem

must be overcome, however, and it must be well done. The façade of the modern apartment house in reality is made up of walls punched full of holes of required size to be shaped into windows. Even the size of each pane of window glass is given as a factor to be struggled with by the designer. To make a pleasing way of grouping these windows, which are to be in scale with the entire composition, is only one of the many problems to be solved by designers in the drafting room.

No invariable rules or laws for aesthetic effects or the consideration of harmony in material combination, nor for relationship of wall surfaces or formulas for architectural composition can be given. The designer must feel his work always, working with the knowledge as to how the completed work will appear, properly using materials in harmony with the purpose of the building and with its surroundings. Fill the mind with beauty by reading and looking at good books of designs. Develop that feeling which comes from within, and be able to unconsciously discern what is pleasing and in good form and one can cast aside the unfit.

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Figure 10. Elevation of a Parish House. Frederick R. King, Architect.



Figure 11. Sketch Study of a Country House. Harry Creighton Ingalls, Architect.

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Figure 12. Free-hand Study, Part Plan and Elevation for the Main Entrance to a Country House.
Harry Creighton Ingalls, Architect.

Figure 6 is a reproduction of the first sketch suggestion of an elevation drawn by the late John M. Carrère for the Blair Building, New York City. Perhaps this very sketch helped in some degree to solve a very difficult problem with which the architects of some twenty years ago were struggling. This was to develop a pleasing design suitable for tall buildings. The building of such structures at that time was rapidly becoming more and more necessary, in order to obtain the maximum return in rentals for floor area on properties having extremely high land values, especially in overgrown and congested districts.

The taller buildings erected, up to about the time this sketch was made, were generally designed with

horizontal bands or superposed architectural treatment to overcome the appearance of being "stretched out." The demand for a suitable design of the so-called "skyscraper" then grew beyond the bounds of the architectural motifs used, for it would have been impossible to continue the superposed orders and horizontal bands upwards for twenty stories or more, without having the building look like "Jacob's Ladder."

Mr. Carrère, as his sketch would indicate, clearly foresaw the requirements of a suitable design for the skyscraper, in his conception of the building as a complete mass and not something formed by piling one narrow architectural treatment above another. The result was the introduction of what

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Figure 13. Study in Elevation for a Country House. Theodore E. Blake, Architect.

might be called a new type of architecture, which is characteristically American. The forerunners or prototypes of the design of tall buildings can, of course, be seen in the campanile and towers of the old world, or perhaps the column with its base, shaft and capital may be used as a prototype, with the lower stories of the building treated as a base, the main long body being considered as the shaft, and the upper floors, which are usually embellished with the cornice, may be regarded as the capital.

Embryonic as Mr. Carrère's sketch is, it is really the beginning of the working drawing for this facade and it is very interesting to view the erected building which has now been standing for about twenty years. Compare the general treatment and effect of design with this sketch and note how all the principal features have been retained and are executed in a solid mass of materials which was so roughly, almost crudely, indicated on a scrap of tracing paper by one whose enduring testimony will be for all that is good in architecture.

Figure 7 illustrates a sketch study drawn by Mr. Thomas Hastings for the lower part of an office building. This drawing has been selected to show the technique in draftsmanship, the perfect command in the study of composition, the knowledge of motifs. Perhaps this drawing will illustrate in some measure the remarks made in this article, regarding the fact that the feeling and ability to judge that which is good must come from within. A certain sense of pleasure or composure is felt when the design is in scale and harmony.

Another important effect can be seen, or rather felt, from this drawing in the relationship and scale of the windows above the principal column motif. The windows are of just the right size and shape and could not be any differently arranged nor

changed in shape, without having a disturbing effect. It is from the working and association with men who have attained prominence through their own ability in producing actual results, that the younger and less experienced will obtain confidence in their own work. Advice from the superiors will always be gladly given; and with it is placed a trust which is, that the work of good architecture will be carried on.

Figures 8 and 9 illustrate a very interesting way of presenting to the client a "picture" of work to be executed, especially for an addition to be built to an existing building. Figure 8 is an enlargement from a photograph showing the present building designed by Theodore E. Blake, over which enlargement the contemplated addition was drawn along the same perspective lines, although this addition, in this case was made on another sheet of paper. There is no reason, however, why the drawing could not be made on the enlargement itself, if the character of the photograph would permit.

This additional drawing was then pasted on the enlargement and then rendered in pencil or wash to harmonize in tone value with that of the parts shown in the photograph. The enlargement on which the additional drawing had been pasted was then re-photographed and the reproduction shown by Figure 9 presents the finished result.

With the modern and economical methods of obtaining photographs and photostats, either from drawings or of actual executed work, the method as illustrated may perhaps develop into a very interesting way of presenting contemplated work to the client. Drawings can also be photographically copied and then be used as studies for development, changes, etc., without the necessity of altering or

(Continued on page 60)

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SAN FRANCISCO ARCHITECTURAL CLUB NOTES

AFTER the banquet all effort is directed toward the success of the Annual Club Jinx to be held in December. Al Williams may be seen most any day in whispered consultations with other members of the Entertainment Committee, with a mysterious and knowing smile forcing itself upon his countenance. Wilton Smith closes up like a clam, and is apparently as much unconcerned, but we have always been told that appearances are deceiving with these quiet fellows. Discordant strains of guitars, banjos and ukeleles are heard emerging from the Atelier room every night, but still a trained ear can discern a remarkable improvement from a week ago. Rehearsals are the order of the day, and yet everything seems to be shrouded in mystery. This much only has gotten to the reporter's ears: that it is going to be SOME JINX, and this is all that he can testify to.

The Free Hand Drawing Club started in September has proved such a success that it has been decided to continue the class for another ten weeks, starting on November 27th, to draw from living models.

The following new members have been elected during the past month: H. W. Ruppel, Geo. W. Travis, M. Bernstein, Mark E. Manning, Theodore Vierra, Edward Cereghino, Bernard W. H. Scott, and James Edward Bodem. The Club is now aiming toward a goal of three hundred members, and at the present rate of increase, it will soon be reached.

THE PITTSBURGH ARCHITECTURAL CLUB

WITH enormous gobs of enthusiasm, the Pittsburgh Architectural Club conducted their initial event of the season, at the Schenley Hotel of Pittsburgh, on the evening of October 25th.

Aside from a sumptuous banquet, the annual election of officers was the piece d'resistance of the evening, and in spite of the usual withdrawals of candidates, etc. (the architects of Pittsburgh are extremely retiring and office shy), the following victims were inducted into office: Leo A. McMullen, President; W. B. Chalfant, Vice-President; H. B. Steffler, Secretary; Thomas Pringle, Director, and William Harrold, Treasurer.

Mr. Chalfant (Compte de Chalfant), editor of the *Charette*, addressed the assemblage in his usual vigorous manner, at length; easing his mind of a burden that has evidently been troubling him a long time.

The guest of honor of the evening was Henry McGoodwin, who has recently returned to Pittsburgh and is putting much spirit into his work at Carnegie Tech. More power to him! Introduced by Mr. Pringle, chairman of the meeting, Mr. McGoodwin responded with a few very brief words of appreciation. Mac is an ardent, hard worker but dislikes to talk about it.

Mr. Grapin, Prix de Rome, etc., recently appointed professor of Architecture at Carnegie Tech., was the assistant guest of honor, but responded to an invitation to speak with a mere smile. Mr. Grapin is very modest and in addition to that *parles* mostly *Francais*.

The members of the Institute avoided the tedium of a business meeting by wandering off to the Carnegie Galleries to view the Fall Exhibition of Paintings. The Club members expected to join them later, but became lost in a maze of discussion and argufication;—hence lost the pleasure of listening to the wisdom of the ancients (advisedly). "A pleasant evening was had by all."

THE CARNEGIE ARCHITECTURAL SOCIETY, PITTSBURGH, PA.

THE Carnegie Architectural Society, a reorganization of the Tech. Architectural Club of 1912, has successfully started the school year. The graduate and undergraduate members of the society have always endeavored to foster and develop architectural interest and ability amongst the members and to create a better feeling of fellowship between the students in the department.

Professor Henry McGoodwin, Director of the College and faculty advisor of the society, attended our first meeting this year. He spoke on Beaux-Arts problems. Our purposes were discussed, plans were made, and from all indications, this year will be more active than ever before.

The Carnegie Architectural Year Book which was first published last year is again being considered this year. A scholarship has been offered by the society for the best work in the department, also prizes for the best esquisse-esquisses. Then, too, smokers, dances, a banquet, and an exhibition have been scheduled so that the social as well as the professional activities have been well balanced.

The society has rented a home on the campus where many of the members are living. The weekly meetings are held in the club rooms and during this season, as in the past, addresses will be made there by city men, prominent in the profession. Classes are also conducted in sketching and water coloring at every other meeting.

Last Tuesday, the members held an informal banquet. Several of the alumnae were present. Among them was Mr. "Will" Perkins, who is an instructor at the College. Mr. "Art" Gehring, who has just returned from his study and travels in Europe, was also with us.

We take this privilege, which PENCIL POINTS has so kindly extended to us, to ask our alumnae and friends, whom we have been unable to communicate with, to send us their address. We wish to send each and every one The Carnegie Tech. Year Book and circulars.

COLUMBIA EXTENSION ATELIER

AT THE annual election of officers of the Columbia Extension Atelier, the following men were named to hold office for the ensuing year: Massier, Walter Conley; Sous-massier, Merrell G. Maybeck; Treasurer, G. R. Tyler; Secretary, W. E. Page; Librarians, Charles H. Dornbusch, A. E. Klueppelberg.

The Atelier has been very fortunate in securing the services of Mr. J. G. Schuhmann, Jr., as critic. He will serve with Messrs. Corbett, Van Pelt, and Flanagan.

Mr. Schuhmann was a former member of the Atelier and was its massier 1919-1922. He won the French Society Medal in 1919 and in 1920 he won the Municipal Art Society Prize and the Emerson Prize. For two consecutive years he was a Paris Prize logist. He enlisted in the U. S. Army Corps of Engineers in November, 1917, and was promoted to Master Engineer. Mr. Schuhmann's ability and intense interest in Beaux-Arts work have long been recognized by those associated with him, and he makes a valuable addition to the Atelier's able staff of critics.

PENCIL POINTS

THE AMERICAN ACADEMY IN ROME

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following news items:

"The month has been one of departures, preparation for the new Professors and Fellows, and report writing for all concerned. The new Professors and new Fellows are now in residence, and the first meeting of the Academic Council has already taken place. The student body never grows old—this is an affliction visited only upon the Professors! The work of the seven or eight students in residence has gone on quietly but satisfactorily. Of especial interest to me has been architect Hafner's study of the Dome of St. Peter's. He is making an investigation of the line of thrust of the dome. The two shells and the ribs are covered with plaster, so that it is impossible to see whether the shells are bonded into the ribs or not, a fact which is essential for him to know in making his calculations. The Vatican authorities kindly allowed us to remove the plaster in eleven places. The results will appear later on in Mr. Hafner's report. Mr. John R. Morron, President of the Atlas Cement Co., has presented us with ten barrels of his best cement for repairing certain portions of St. Peter's. It will interest you to know that some of the cement has already been used in restorations which are being made on the façade. Hafner's copy of Michelangelo's model of the dome of St. Peter's, which Sig. Ranieri, who built the Academy, is making, is a splendid piece of work and is to be delivered in a few days.

"An event of importance has been Mr. Mead's visit. He and Mrs. Mead arrived last Wednesday and they left last Saturday for America. Mr. Mead went through the studios, and both Mr. and Mrs. Mead lunched with the Staff and Student body on Saturday.

"Other visitors were Prof. David S. Smith of the Jury on Musical Composition, Ex-Senator Theodore E. Burton, who has been a contributor to the Classical School for many years, and the artist Mr. Frederick Dielman.

The gifts of the month were: Mrs. Donald W. Brown, for Concert of last Spring, \$100; Prof. Charles A. Caruth, for Library, Lire 450; Ex-Senator Theodore E. Burton, for museum, Lire 50.

"We have a splendid lot of Professors and Fellows for the new year. Every room in the main building is for the first time occupied by our Professors and our own Fellows, and there are three women Fellows from contributing organizations in residence at the Villa Aurelia, which is the maximum number of women we can take into residence. Thus we start the year propitiously."

From a letter from Mr. John C. Rolfe, Professor in Charge of The School of Classical Studies, we quote the following:

"The work of the School began on October 3, with a general meeting of all the students, at which the plan of the year's work was outlined. There are seventeen students registered. Of these three are fellows of the Academy, four hold fellowships from universities in America, six are graduates or post-graduates of American colleges, and four are visitors, three of whom are university professors. Six of the students are already engaged upon special work of a technical character, and several others are planning to begin such work in the near future.

"As usual a varied and somewhat full program has been offered, including topography, sculpture, vases, and Etruscan archaeology, but attendance is required only on the lectures preparatory to the weekly Campagna trips. I have found it advisable to offer an introductory course in Latin inscriptions, attended by eight students, partly to give some acquaintance with the subject to those who have had no previous work in epigraphy, and partly to prepare some of them for the more advanced work beginning in January. A liberal amount of time is also set aside for consultation with students who are engaged in research.

POWER SHOW OF INTEREST TO SPECIFICATION WRITERS AND PRACTICAL MEN

IT WILL be well worth the while of any specification writer or any one interested in the practical or engineering side of architecture to visit the Second National Exposition of Power and Mechanical Engineering to be held December 3-8 at The Grand Central Palace, New York.

The list of exhibitors shows that there will be much of value and interest for the man who is concerned with mechanical equipment as a part of architectural work as well as for the man who specializes in power and mechanical engineering. This is a side of architectural work to which an increasing amount of attention must be given, and an exposition of this kind affords a special opportunity for the architect, and members of his organization to familiarize themselves with the advances in this field with the expenditure of a minimum of time. In addition to hundreds of exhibits there will be a comprehensive program of twenty-five motion picture films that present vividly various interesting industrial and engineering processes.

COMPETITION FOR PARIS PRIZE

THE first preliminary competition for the Paris Prize of the Society of Beaux-Arts Architects will be held January 5, 1924. The winner of this prize receives a free course in architecture in Paris. All desiring information about this competition should write immediately to the Chairman of the Paris Prize Committee, Care of The Beaux-Arts Institute of Design, 126 East 75th Street, New York City.

ARCHITECTURAL BOWLING LEAGUE

IN THE November issue an account of the reorganization of "The Architectural Bowling League" was given together with a report of the standing up to the time of going to press. Below is given the standing to November 20.

	Total games played	Won	Lost
1. B. W. Morris	11	1	8
2. McKenzie, Voorhees & Gmelin	11	9	2
3. Cass Gilbert	11	6	5
4. Donn Barber	11	0	11
5. McKim, Mead & White	11	4	7
6. Thos. W. Lamb	11	7	4
7. W. L. Stoddart	8	4	4
8. Sommerfield & Steckler	8	2	6
9. Dwight Robinson (Arch. Dept.)	8	7	1
10. Alfred C. Bosson	8	6	2
11. J. Gamble Rogers	8	4	4
12. Warren & Wetmore	8	6	2

High Team Score, 798, by McKenzie, Voorhees & Gmelin.
High Individual Score, 201, by Lyman of Warren & Wetmore.

High Individual Average by Ackerman of McKenzie, Voorhees & Gmelin.

N. T. Valentine, Sec., Warren & Wetmore.

P. Lynch, Treas., Central Blue Print.

AN ACKNOWLEDGMENT

DURING the past two months we have written to many hundreds of PENCIL POINTS subscribers in all parts of the country asking them to send us data regarding their own localities for our files. The response has been highly gratifying and since the number of our correspondents is so great that it is impracticable to express our appreciation by means of individual letters, we take this opportunity to thank all who have helped us in this work for their splendid co-operation.—PENCIL POINTS.

PENCIL POINTS

DESIGN IN THE DRAFTING ROOM

(Continued from page 57)

retracing the originals. This will in no way belittle the value of draftsmanship, nor necessarily be over commercial.

Figure 10 shows a study of the elevation for a parish house. This drawing illustrates a very interesting and effective method of development study. No hard lines have been used, but the free-hand pencil lines form the shape and mass by being carried to an equal stopping point without being bound or received against hard lines. The designer has worked with the image of the completed work before him, and the brick, texture, proportionate sizes of openings, and carefully studied scale have been well considered and worked out, and the drawing does not show any unnecessary lines for particular effects.

Figure 11 shows a sketch study in perspective of a country residence. The ensemble is complete and the roof levels and intersections charmingly worked out. The entire composition is well tied together by the design of the garden court, architectural walls and balustrades. The wall surfaces in relation to the openings are studied and graceful and form a very pleasing effect. The drawing itself connects well for good drawing composition. The forecourt and entrance splendidly emphasize the light effect on the walls. The sketches show no undue effort in obtaining the necessary indication and tone values. The use of free-hand perspective in drafting room design is of great value, offering perhaps the best means of study for ensemble. The drawings need not be "finely drawn" or made laboriously, just a few lines with the shade values strongly marked will tell the story well in three dimensions.

Figure 12 shows a free-hand part plan and elevation study for an entrance door feature of a country residence. This is a very interesting drawing. Much time is often wasted by making sketch studies too much of a T-square and triangle operation. Values are what count and the best way to obtain the desired freedom of imagination is by the use of a soft pencil which should be handled very much as the painter uses his brush. Train the eye and hand to make every line count.

Figure 13 illustrates a free and bold sketch of the main façade for a country residence. The drawing speaks for itself. How well it calls forth the play of imagination so that the actual house appears to grow, and that it must be placed with terraces, steps, trees and gardens in the exact place where the designer intended that it should be placed. The manner of representation in this case was chosen to give the client a more clear idea of the design than would have been conveyed by an elevation purely in the nature of a working drawing and without the touches that give realism.

To be able to express constructive thought by means of drawing is a wonderful gift, to be developed by the architect and draftsman through constant study and practice.

THE SKETCH PROBLEM

(Continued from page 44)

sion; it is best to start with the Class B sketches and work through those in Class A to the prize problems; do not hesitate to try for these prize problems as soon as you are eligible. One seldom wins one of these prizes on the first trial—by the time he is making his second attempt he knows better what is wanted, and is more able to dispose of his time to advantage.

First, it is needless to say, a man's "kit" must be ready beforehand—pencils, erasers, water-colors, transfer paper, the final paper or board, "T" square and instruments, etc., etc. No time can be taken from the nine hours for this purpose.

Then, read the program, and reread as often as necessary to understand what it is all about,—what are the important requirements, what is to be the character. You

must form a picture in your mind of what you are after, of the solution as a whole without thinking of details. Next you must find out what are the strokes and lines that will bring out this character.

People use different language to express thought; draftsmen use different mediums to express an idea. Any of these mediums will be good if it will express the thought; but certain things are essential in a good sketch problem—you must fill the paper, or, to put it in another way, you must compose the sheet. The lines on your drawing must not lead the eye out of the picture, but should focus it on the thing that is to be seen; the sheet must always count as a sheet—as a whole. Decide beforehand what medium you will use, so that you will not waste part of the nine hours to make this decision. It is wise to find out in your early sketch problems what is your best medium—and then use it and become proficient in it.

It is important to get the proper scale:—mark in the corner of the paper a drawn scale to keep it in mind. Once you have it in mind you will not need again to use a scale.

Now, as to the division of your time. How long shall you study the program, how long study at a small scale; when is the proper time to start the final drawing? Each man has a different way of working; some can speed up more effectively in the early stages of the process, and are sluggish in the actual drawing; others will be the reverse. In making a few sketch problems you will begin to understand your own characteristics in this. Until you "know yourself," keep at least six of the nine hours for the final presentation. It is most important to have plenty of time for this, for *whatever else a sketch problem must be, it must be completed when the time is up.* No matter how good your idea, unless it is adequately presented it will not interest the jury.

In presenting this idea, detail—carefully drawn detail—is not necessary. All detail is indicated, but it must look like something,—must be reasonable. The Class A sketch problem shown in Figure 11, shows a very free indication of detail, quite different from that of Figure 12, where everything is drawn, rather than indicated although drawn free-hand. One thing which is important in the sketch problem, as in any composition, is to have a dominant feature, and I mean here a dominant feature on your sheet arrangement, quite aside from the design of the piece of architecture which is being presented.

A study of the examples shown here, as well as of the premiated work published after each judgment, will be of great value. It is interesting to compare these with the French example shown in Figure 13—a sketch submitted in the first preliminary for the "prix de Rome" at the Ecole des Beaux Arts. But, after all, to *do* a good sketch problem, one must *have done* sketch problems,—the more the better.

QUAINT SPECIFICATIONS

FROM one of our readers, Mr. C. R. Stephany, specification writer, with Gordon & Kaelber, Architects, Rochester, N. Y., we have received an interesting clipping from the *Rochester Democrat*, quoting the specifications for one of the oldest, if not the oldest, of frame buildings now standing in this country, the Quaker Meeting House in Easton, Maryland. This building was erected two hundred forty years ago.

The old contract for the building reads: "To agree with ye carpenters for ye building of ye said house 60 foote long and 44 foote wide, and to be strong, substantial framed work, with good white oak sills and small joyst, and ye upper floors to be laid with plank and ye roof to be double raftered, and good principal rafters every ten foote, and to be double studded below, and to be well braced, and windows convenient, and shutters, and good large stairs into ye chambers which chambers are to be forty foote square at each end of ye house, and twenty foote between them, and for other conveniences to be left to direction of ye aforesaid friends."


How it was possible to build two rooms "forty foote square with twenty foote between" in a house sixty feet long is something of a mystery.

HERE and THERE and THIS and THAT

Editor's Note:—In our January issue we hope to be able to announce to our readers that arrangements have been concluded with the one man in this country best qualified to conduct this section of PENCIL POINTS. In the meantime the general purposes of this department are being set forth so that our readers may send in suitable contributions for publication under this heading.

In establishing this column or department it is our purpose to provide a place in PENCIL POINTS for the publication of miscellaneous items, many of which are too short for articles, and many of which, in the form of letters, have heretofore been omitted from the paper because of lack of space. Contributions are solicited on any subject having to do with our field. They may be technical or non-technical in character, verse, sketches, caricatures, personal items, news items, opinions, kicks, all are welcome. So sharpen up your pens and pencils and send your stuff along.

JOHN A. AHLERS, a good PENCIL POINTER from Baltimore, sends this on a postal:

*PENCIL POINTS: Nov. 7-
GENTLEMEN—
SEND ON SOME OF YOUR INTRODUCTORY
SUBSCRIPTION CARDS. I BELIEVE I CAN SEND
YOU SOME BRAND NEW "POINTERS"*

JOHN A. AHLERS
25 LEXINGTON ST.
BALTO MD.

Good work, John!

WHO will give Samuel Davids, rehabilitated war veteran, a chance to earn a living? Here is his story as told by himself.

Washington, D. C.,
Nov. 15, 1923.

"PENCIL POINTS:
Dear Sirs:

Some time ago we became acquainted and you did me a very good turn, which was much appreciated by me. I am going to ask you to do one more—a little harder than the last one. As I have previously told you, I am a disabled war veteran and being rehabilitated by the United States Veterans' Bureau in Washington, D. C., where I am making my home. I was notified by the Bureau that I would be cut off from the pay-roll on December 1, 1923, as being rehabilitated as a copyist architectural draftsman. I have a sick wife and two children to take care of and a hard winter ahead of me. I am not asking you for any financial aid, but would like you to help me in this way. I can read plans thoroughly and do tracing and copying—some construction work or superintend same. I am a strictly sober man and would like to secure a position where there is chance for promotion—salary to be a fair one to start with and to enable me to support my family. I prefer Washington, D. C., or some nearby city. Thanking you for your interest in advance and trusting that you will be able to secure me a position commensurate with my accomplishments, I remain,

Sincerely your friend,
(signed) SAMUEL DAVIDS,
2206—16th St. S. E.,
Anacostia, D. C."

PROFESSOR WILLIAM EMERSON of the Department of Architecture, Massachusetts Institute of Technology, has been an enthusiastic supporter of PENCIL POINTS from the beginning and finds himself especially interested in some of our recent publications. We print herewith a letter recently received from him.

"Again I write to fulfill my obligations to you and to PENCIL POINTS, a debt which is steadily growing, as PENCIL POINTS is to my thinking doing a service to the profession in general and to the architectural beginner in particular that is of very high value, through the publication of such books as 'L'Architecture Toscane' and the 'D'Espouy Fragments d'Architecture Antique' in such form as to make them available for the most limited purse. I have been carefully through both of these books and highly commend both the presentation and the little commentaries presented by Mr. Van Pelt concerning the subject matter of the different plates so that these buildings assume some individuality in the eye of the professional reader. I should like to order herewith additional copies of both these two books for our architectural library, and shall be obliged to you if you will bill them to the Department of Architecture, Mass. Institute of Technology, Boston. Thanking you again for this added service, and hoping that you will let me know in what way I can further the excellent work you are doing.

Yours sincerely,
(signed) WILLIAM EMERSON."

THE Registration Cards are coming in steadily but there are still many draftsmen identified with the building industries who have not yet taken the trouble, both in our interests and their own, to send in their registrations. As we have previously explained, we regard it as highly desirable that a complete roster of all men engaged in drafting room work should be in existence in this office for the convenience of the profession generally. There is absolutely no cost attached to this registration and those registering may be absolutely sure that no embarrassing or improper use will be made of their names. It has frequently been possible for us, through our office records, to forward mail where the sender desires to reach a certain draftsman either for business or personal reasons and has lost track of his whereabouts. The more complete our list becomes, the better service we can render in this respect. So if you have not yet registered, please send for a card and take the necessary two minutes to fill it out and send it in.

THIS department closes for the press on the fifteenth of each month. Contributions should be sent to the editor of PENCIL POINTS. For the best contribution each month a ten dollar bill will be mailed the day the magazine is published. Other contributions, if found suitable, will be published and those not considered available will be returned if such request accompanies the contribution. If you are in doubt concerning the availability of any items you have in mind, send them along and let's look them over.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION, PART XIII.

By OTTO GAERTNER

In this series of notes Mr. Otto Gaertner, A.I.A., Associate Member American Society of Civil Engineers, is treating of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Garages (Continued)—It is well to remember that where the machine room is at the top of the shaft the headroom should be not less than six feet and six inches for small elevators, but if possible eight feet. The saddles at the doors generally project one inch into the shaft and are beveled on the under side so that nothing can get caught under the projection when the car rises. There is generally three-quarters of an inch or so clearance between the edge of the sills and the platform of the car. Space must be allowed at the top and bottom of the shaft for over travel. The amount of space required by building codes and ordinances depends upon the speed of the car, the recommended distance being from three to six feet at the top with two feet additional for clearance, and from one and one-half to five and one-half feet at the bottom with two feet additional for clearance. It will generally be found that three feet top and bottom will be sufficient over travel but the code requirement will govern. Also a pit extending four feet below the lowest landing will generally be acceptable but five feet will give more space for oil buffers under the car and counterweights.

A substantial iron or steel grating must be provided directly under the sheaves at the top of every elevator shaft in New York. If the elevator machine is over head it should be supported on a concrete slab over steel beams supported on the shaft walls or on the structural steel of the building. Planks two inches thick laid on steel beams are sometimes permissible. It is well to allow thirteen to fourteen feet from the top landing to the under side of the sheaves above and more if possible even when not required by law.

All parts of the elevator machinery should be properly enclosed, but ample clearance should be left for access to limit stop devices, motor bearings, oil cups and all movable parts requiring oiling or other attention. In addition, when the machine is located at the bottom of the shaft it may be necessary to protect it with a substantial pit pan.

Substantial buffers of the oil, pneumatic, or spring type should be provided under the elevator car and under the counterweights. On account of the short travel and low speed, the sidewalk type elevator need not have them. Spring bumpers are used for speeds of over fifty feet per minute, but it is generally conceded that for elevators with speeds exceeding three hundred and fifty feet per minute, substantial oil buffers should be provided. The sidewalk type of elevator is often a hand power lift but where it is extensively used the electric type is essential. They are not often adaptable for garage purposes, that is for lifting or lowering vehicles, on account of the sidewalk area which they obstruct when in use. If they are not placed on the sidewalk, but are kept within the building lines as when they are placed in a court, there is no objection to them. A number of them have been installed in this way, their capacities being from one to six thousand pounds and their speeds being from twenty-five to fifty feet per minute. For the more speedy type of elevator the bumpers must be designed according to the speed and on the supposition that the car is fully loaded. For plunger elevator installations provision must be made to stop the plunger as well as the car. Bumpers or buffers should be located symmetrically with reference to the center of the car.

The car and counterweight guide rails should be of steel or iron fastened to the sides of the shaft with wrought iron or steel brackets. The size of the rails and the strength and the spacing of the brackets should be such as to safely withstand the application of the safety when stopping a fully loaded car. Wooden guides are sometimes used for freight elevators having less than one hundred feet travel and having less than a speed of

one hundred feet per minute but they are not recommended and in some localities they are not allowed by local ordinances. All guides should be run high enough so that the car shoes will not run off in case the over-travel is exceeded and they should rest on a secure support at the bottom. Where safety devices operate on the rails, the guiding surface of the rails should be finished smooth and the joints tongued and grooved or doweled. Special attention must be paid to the rail supports at a point where the guide shoes come in contact with the guides when the car is at a landing. The guides should be supported so that the deflection does not exceed one quarter of an inch under normal operation. Bolts for fastening the supports should be of ample size and suitable for the material to which the supports are to be fastened.

Ropes or cables are generally of iron or steel without covering except that marine-covered cables are used where there is any special hazard or liability to corrosion. Ropes of other materials are permitted for hand power lifts, and chains instead of ropes are satisfactory for sidewalk lifts. The length, size, and winding of the ropes depends upon the type of elevator machine used. The ropes and cables should be tagged to show the diameter and strength of the material of which they are made and the date of installation. Allowance should be made for defects and wear, suitable factors of safety being allowed. They should frequently be inspected and, in the case of cables, lubrication should be attended to. At the car and counterweight ends of the ropes equalizer arms or springs are recommended.

The counterweights are generally composed of sections bolted together by at least two tie rods passing through holes in all the sections and having lock nuts at the ends secured by cotter pins. When necessary the counterweights shall have metal enclosing shields.

Elevators for carrying automobiles should have car platforms of ample strength to support with safety at least seventy per cent of the live load concentrated equally at any two points fifty-six inches apart on a line parallel with the entrance doorway of the car.

(To be continued)

SPECIFICATIONS FOR HOLLOW STEEL DOORS

Made by

LAWTON-STEPHENS CO., INC.,

427 Marcy Avenue, Brooklyn, N. Y.

Successors to Grinden Art Metal Company.

Specifications—All doors to be of size and design as shown on door schedule and drawings, of LAWTON-STEPHENS CO., Inc., manufacture, constructed throughout of open hearth, cold rolled, patent leveled furniture steel. They shall be $1\frac{3}{4}$ in. thick, 5-in. stiles and rails, except bottom rail which shall be 10 in. in height, and be welded at all points of intersection. Stiles and rails to be of No. 18 gauge steel, with suitable asbestos or cork filler; panels to comprise two sheets of No. 18 gauge steel with suitable asbestos or other filler, and mouldings to be cold drawn of No. 20 gauge steel. Mouldings should be interlocked with and into these stiles and rails, and where doors are glazed be provided with loose steel stops arranged to receive the glass.

If Underwriters' doors are required, they should be so specified, in which event, stiles and rails are lined with asbestos, with Z-bar or other suitable spreader.

Jambs may be No. 12, 14 or 16 gauge, one-piece combination buck and frame, or No. 18 gauge and installed over No. 12 gauge steel bucks or over wooden bucks. With the last named construction, trim is separate and can carry, as with the jambs, baked enamel finish, either plain or grained as desired.

Door transoms, base, chair rail, picture or wire mouldings may be had either in prime finish and finished afterwards at the building by the painting contractor, or in baked enamel finishes, either plain color, stippled or grained to imitate wood.

(Advertisement)

PENCIL POINTS

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS by the firm issuing the publication. When writing for any of these items please mention PENCIL POINTS.

Flush and French Doors.—Catalog F. Illustrated with many full-page color plates showing full line of panelled and plain doors and French doors. Details of construction and plates showing interior treatment. 80 pp. $8\frac{1}{2}$ x 11. Roddis Lumber & Veneer Co., Marshfield, Wis.

Architectural Specifications.—Finishes, enamels, wall finishes and stains. Portfolio including specifications for exterior and interior work. Color samples. $10\frac{1}{2}$ x 12. O'Brien Varnish Co., South Bend, Ind.

Exterior Lighting Fixtures.—Catalog 4H. Profusely illustrated showing full range of exterior lighting fixtures for all requirements. Hundreds of designs. 96 pp. $8\frac{1}{2}$ x 11. Smyser-Royer Co., Philadelphia, Pa.

Architectural Granite.—Booklet containing color plates and samples of various granites showing different textures and finishes. Moulding profiles and complete specifications. $8\frac{1}{2}$ x 11. National Building Granite Quarries Assn. Inc., 31 State St., Boston Mass.

Crittall Universal Casement.—Catalog 22. Illustrations in sepia showing many applications of casement windows for all types of buildings. Detail drawings and complete specification data. 9 x 12. 76 pp. Crittall Casement Window Co., Detroit, Mich.

Buckeye Heating and Ventilating Units.—Bulletin No. 122. Contains engineering data on the subject. Tables, detail drawing, typical layouts and specifications. 32 pp. $8\frac{1}{2}$ x 11. Buckeye Blower Co., Columbus, Ohio.

Metal Lath Data Book.—Handbook on the subject of the application of metal lath to modern buildings. Many detail drawings, much practical data on construction of partitions, walls, floors, roofs, ceilings, etc. 48 pp. $8\frac{1}{2}$ x 11. Truscon Steel Co., Youngstown, Ohio.

Specifications for Stucco Work.—Covers uses of Kellastone Stucco. All finishes and conditions are considered. 18 pp. 8 x 11. National Kellastone Co., 155 E. Superior St., Chicago, Ill.

Grading and Dressing Rules for Douglas Fir, Sitka Spruce, Red Cedar and West Coast Hemlock.—Handy pocket size 4 x 9. 10 pp. West Coast Lumbermen's Assn. Seattle, Wash.

Solid Steel Sash.—Catalog E 22. Data on steel sash and doors including sections and all other necessary information. $8\frac{1}{2}$ x 11. 24 pp. Bogart & Carlough Co., Patterson, N. Y.

Flex-Or-Crete.—Description and specifications for architects, engineers and builders. Loose-leaf portfolio covering data on sub-floors under wood, sub-floors under linoleum and sub-roofs. 34 pp. $8\frac{1}{2}$ x 11. Flex-Or-Crete Corporation, Earle Street, Boston 42, Mass.

Asbestos Protected Metal.—Bulletin 71. Describing this metal and its uses for industrial buildings. Much engineering data, diagrams and sections. 24 pp. $8\frac{1}{2}$ x 11. H. H. Robertson Co., Pittsburgh, Pa.

Brief Wood Finishing Formulas.—Loose-leaf on heavy cards, suitable for reference and filing, specifications. 16 pp. $8\frac{1}{2}$ x 11. Berry Bros., Detroit, Mich.

Specifications for Metal Lath Construction.—Covers application of this material in all types of buildings. Detail drawings showing construction. 16 pp. 8 x 11. North Western Expanded Metal Co., 407 So. Dearborn St., Chicago, Ill.

Linoleum Data Book.—Loose-leaf portfolio covering subject of linoleum in relation to modern buildings. Color cuts, samples. 36 pp. $8\frac{1}{2}$ x 11. W. & J. Sloane, 5th Ave. & 47th St., New York City.

Catalog of Drafting Room Supplies.—Comprehensive handbook covering all types of supplies and equipment required in the drafting room. Completely indexed. 384 pp. 6 x 9. New York Blue Print Paper Co., 96 Reade St., New York City.

Cork Insulation.—Specifications sheet covering subject of cork insulation. $8\frac{1}{2}$ x 11. United Cork Companies, 50 Church St., New York City.

Sash Cord Information and Specifications.—All information required by the architect to specify proper size, and weight of cord. $8\frac{1}{2}$ x 11. Samson Cordage Works, Boston, Mass.

Standardized Unit System for Kitchens.—Typical layouts and descriptions of full line of kitchen conveniences, medicine chests, etc., including large sheet containing detail drawings and dimensions. $8\frac{1}{2}$ x 11. 12 pp. Wasmuth-Endicott Co., Andrews, Ind.

Water Supply and Sewage Disposal Systems.—Specifications covering necessary equipment for these purposes. Complete data. $7\frac{3}{4}$ x $10\frac{1}{2}$. 40 pp. Kewanee Private Utilities Co., Kewanee, Ill.

Non-Cracking Terrazzo Flooring.—Data sheet showing improved method of laying floors of this type introducing new factor in floor design. Diagrams and full information. $8\frac{1}{2}$ x 11. L. Del Turco & Bros., Harrison, N. J.

Blabon Art Linoleums.—Styles for 1024. Profusely illustrated Handbook containing all information on the subject. 132 pp. $3\frac{3}{4}$ x $8\frac{1}{2}$. The Geo. W. Blabon Co., 212 Fifth Ave., New York City.

Linotile Floors.—Booklet illustrated in color showing application of this material to various types of buildings. Diagrams, specifications. 44 pp. $6\frac{1}{4}$ x $9\frac{1}{4}$. Armstrong Cork & Insulation Co., Pittsburgh, Pa.

Published by the same firm: Reducing Vibration and Noise, permanent Floors for Refrigerated Lines and Tanks, and Armstrong's Cork Tile. 32 pp. $5\frac{1}{4}$ x $7\frac{1}{4}$.

Glass Lined Laundry Chutes.—Descriptive booklet with data sheet, diagrams, etc. The Pfaunder Co., Rochester, N. Y.

Bloxonend Flooring.—Specifications for architects and engineers. Complete information on wood flooring for heavy duty. $8\frac{1}{2}$ x 11. Carter Bloxonend Flooring Co., Kansas City, Mo.

Bishopric Specifications.—Working details and specifications covering stucco base, plaster base and insulating base. Complete information for applying under various conditions. 20 pp. $7\frac{3}{4}$ x $10\frac{1}{2}$. Bishopric Mfg. Co., 110 Este Ave., Cincinnati, Ohio.

Copper—its effect upon steel for roofing tin.—Statement of facts and tests of various alloys. Note on construction of roofs with four full-page plates showing details of construction. 30 pp. $8\frac{1}{2}$ x 11. American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

Metal Conduit Specifications.—Data booklet on the subject. 32 pp. $6\frac{1}{4}$ x $9\frac{1}{4}$. Enameled Metals Co., Pittsburgh, Pa.

Waterproofing Specifications.—Specifications covering the Hausling System of waterproofing for various uses. Standard filing size. Anti-Hydro Waterproofing Co., Newark, N. J.

Artists' Pigments.—Their chemical and physical properties. A book on this subject by an admitted authority. Of the utmost importance to those who desire permanence in color work. 238 pp. 6 x 9. Bound in cloth. Price postpaid \$2.50. F. W. Weber, 1220 Buttonwood St., Philadelphia, Pa.

Venus Pencil in Mechanical Drafting.—Booklet for engineers, draftsmen and others by Harry W. Jacobs. Much useful information illustrated by many drawings. 16 pp. 6 x 9. American Lead Pencil Co., 220 5th Ave., New York City.

Roofing Specification.—Bird's extra heavy built-up roof for application over sheathing. $8\frac{1}{2}$ x 11. F. W. Bird & Son, East Walpole, Mass.

Karnack Waterproofing.—Basic specification covering subject completely. $8\frac{1}{2}$ x 11. Gardiner & Lewis Inc., 30 Church St., New York City.

Soss Invisible Hinges.—Booklet showing details and specification data. Hinges for furniture, cabinets and general use in buildings. 24 pp. Soss Mfg. Co., Grand Ave. & Bergen St., Brooklyn, N. Y.

Instruction Sheet.—Details of standing seam horse head zinc roofing. New Jersey Zinc Co., 160 Front St., New York City.

Improved Mechanisms in Builders' Hardware.—Complete catalog showing detail drawings, and instructions for installing mechanical builders' hardware such as casement hinges, casement operators, hinges and pivots, and overhead door checks. Catalog is 6 x 9. 58 pp. The Oscar C. Rixson Co., 1210 Architects Bldg., New York City.

Creo-Dipt Stained Shingle Homes.—Portfolio illustrated. Forty-seven attractive homes where Creo-Dipt stained shingles have been used. The Creo-Dipt Co., Tonawanda, N. Y.

Water Mixing Valves.—Illustrated handbook showing thermostatic water mixing valves for showers and a variety of other uses. Diagrams and complete specification data. 32 pp. $7\frac{1}{2}$ x $10\frac{1}{2}$ in. Leonard-Rooke Co., Providence, R. I.

PENCIL POINTS



FLOYD W. RAY

FLOYD W. RAY, who recently returned from his studies abroad as holder of the Plym Scholarship, was born in West Virginia. He graduated from High School in Long Beach, California, and later studied architecture at the University of Illinois. His studies there were interrupted by the war. After two years in the service he returned and resumed his studies.

While at school he worked in the office of J. W. Rogers at Urbana, Illinois, where he gained valuable experience. He later worked for T. Beverley Kein, Jr., in Los Angeles.

Mr. Ray has spent a year in travel in France, England, and Italy, devoting most of his time to study in Rome. His home is at Long Beach, California.

One of the pencil sketches Mr. Ray made while abroad is reproduced on the opposite page.

DETAILING STONEMWORK

(Continued from page 34)

height of a pier just because the stone draftsman did not know what size the base should be to receive the brickwork about it; and conversely, the stone contractor will object to cutting a new pier cap when the bricklayer took some liberty with the figured size in order to save clipping of bricks.

The brick size should be considered carefully in laying brickwork to a pattern. Too frequently bricks laid flat, bricks on edge, and bricks on end are all shown together in a beautiful pattern to small scale, which actually will require joints ranging from one-eighth of an inch to one inch when worked out to the exact sizes of the bricks.

In the making of full size details the architect is sometimes hampered by lack of large table accommodations, and sometimes he uses a table that is not quite true, or a wobbly T-square or a loose-jointed rule, and perhaps the tracer is feeling indisposed. Unequal drying of blue prints is not to blame for quite all of the discrepancies that are found.

(To Be Continued)

A FREE EMPLOYMENT SERVICE FOR PENCIL POINTS READERS

(Other Items on Page 70)

Position Wanted by good junior draftsman with 10 months' experience. Student at Pratt Institute, evening class. Salary \$18. Age 19. Anthony Hartig, 579 Onderdonk Ave., Brooklyn, N. J.

Junior Draftsman with good knowledge of interior decoration wishes position in architect's office or with interior decorator. Can do secretarial work if required. Box No. 253 Pencil Points.

Position Wanted by architectural draftsman. 2 years college, 5 years' experience, specializing on pen and ink renderings, design, working drawings, etc. Location in city with Beaux-Arts Atelier. Box 256 Pencil Points.

Experienced Man desires connection with good architectural firm or to form a partnership for the practice of architecture. Cornell University architectural engineering. 20 years with good architects and building contractors. Can handle engineering specifications, superintending and the executive end of an architect's practice thoroughly. Box 255 Pencil Points.

United States Veterans' Bureau, 480 Lexington Ave., N. Y. C., states that the following men will be ready for placement as architectural draftsmen on or about December 1st: Edward Liebrook, 29 years old, Francis Irvine, 33 years old, John E. Davis, 23 years old, Gustave Orlich, Nathan Ehrlich, 25 years old, Geo. H. Flanagan, 26 years old, James H. Lott, 33 years old and Edwin Schultz, 27 years old. Applications should be sent to W. J. Strachan, Chief, Rehab. Section, N. Y. C. Sub-Dist. Office.

Young Man wishes position in architect's office. Willing to start at any reasonable salary. Erick Coebbe, White House Station, N. J.

Position Wanted: Architectural draftsman, 15 years' experience, especially high class residential work. South preferred. Salary \$60.00 per week. Box 261 Pencil Points.

Architectural draftsman with good general experience, inclusive of designing and rendering, desires to make connection with firm doing good work in the vicinity of New York. Box 262 Pencil Points.

Position Wanted by practical architectural draftsman on office buildings, banks and hotels. New York City only. Ten years' experience. Box 260, Pencil Points.

Wanted at once first class architectural detailer who can take hold of a set of scale drawings and detail the building right through. Mann & Stern, architects, Little Rock, Arkansas.

Architect, registered, 35, University man, post graduate degree, twelve years' practical experience all phases of construction, desires association with New York architect who has an extensive and varied practice and can utilize the services of an intelligent and dependable man to assist with the details of administration. Box 265, Pencil Points.

Position Wanted: Draftsman, 22 years old, three years on board, general drafting on speculative small houses and apartments, country houses and bath houses. Desires broader experience. Box 266, Pencil Points.

Position Wanted by young engineer with small architect or contractor. Can draw, estimate and superintend construction, survey, design heating and ventilation systems. Experienced north and south. Seven years' general experience. Box 267, Pencil Points.

Position Wanted: Draftsman with six years of general experience in drafting room, desires position where work of good quality is desired. Sample of work will be sent on request. Box 300, Pencil Points.

Wanted, a capable designer who is familiar with general run of office work and can do water colors. Sanders & Ginocchio, Little Rock, Ark.

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Pencil Sketch by Floyd W. Ray. Church of S. Giusta at Lucca, Italy.



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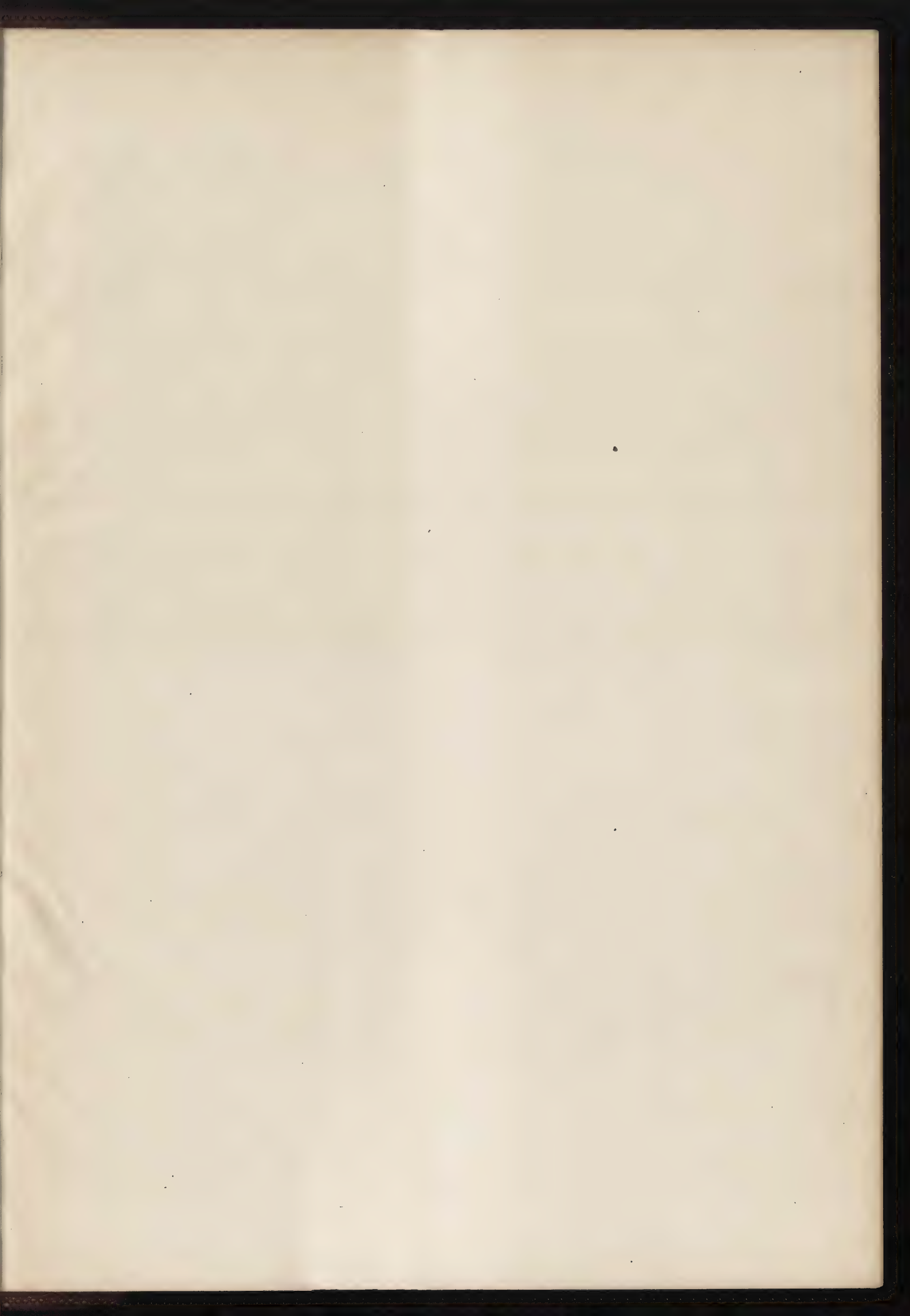
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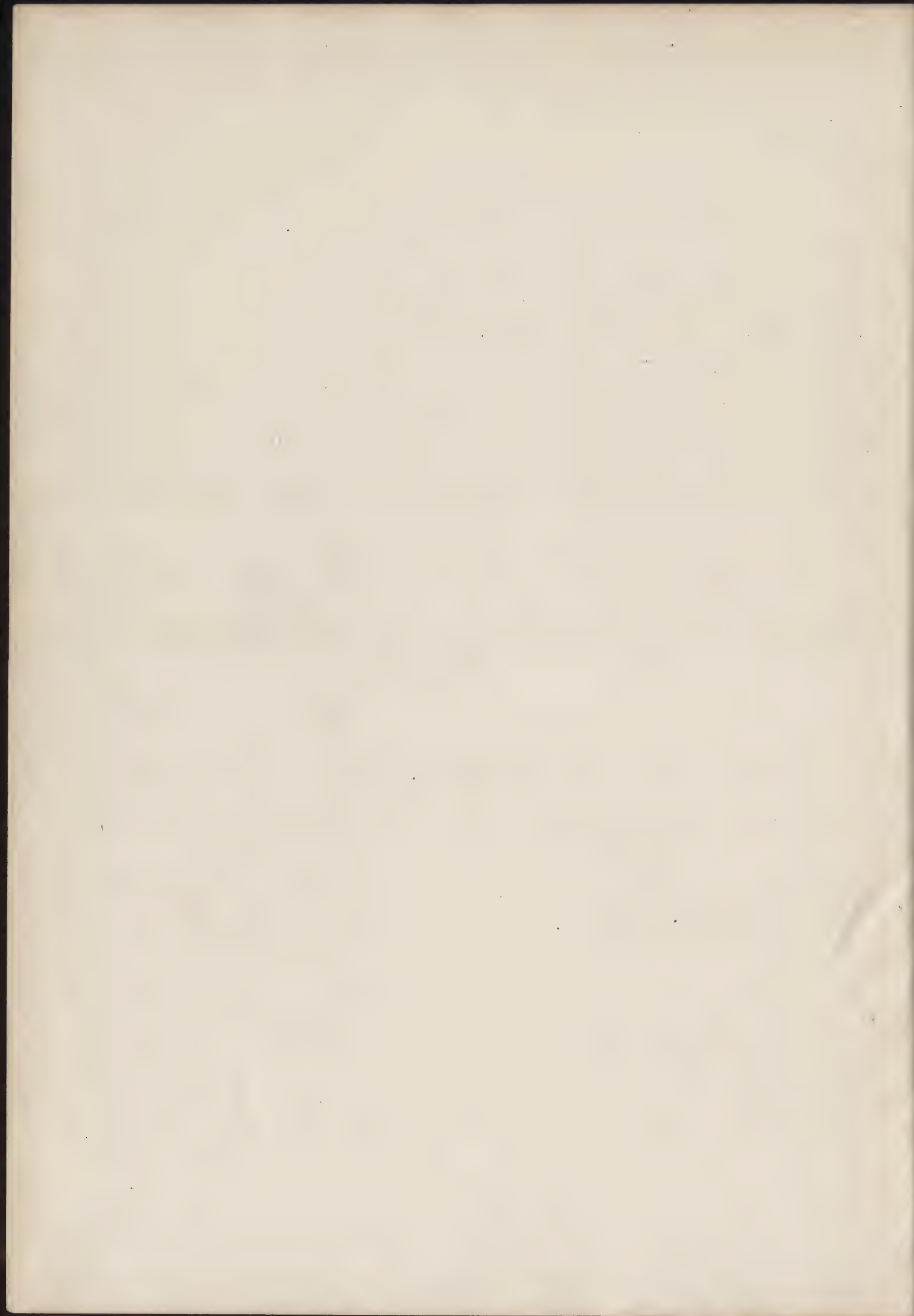
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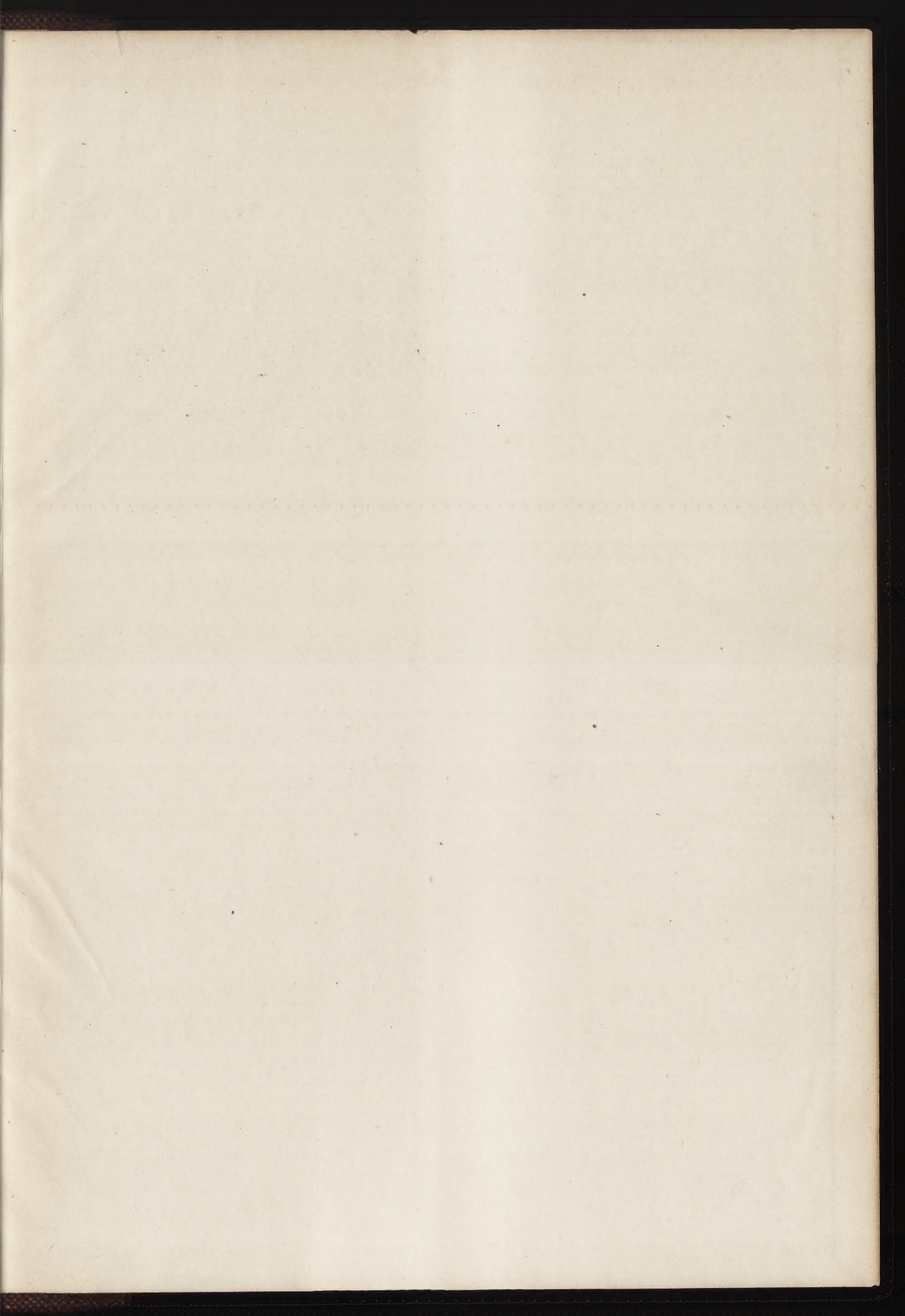
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